ANCIENT LIFE
IN THE
AMERICAN SOUTHWEST

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ANCIENT LIFE
IN THE AMERICAN SOUTHWEST

Type specimens of the Indian Race (Sioux).

ANCIENT LIFE
IN THE
AMERICAN SOUTHWEST

With an Introduction on the General History of the American Race

By

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Illustrated

TUDOR PUBLISHING CO.

NEW YORK 1948

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PRINTED IN THE UNITED STATES OF AMERICA
BY MONTAUK BOOK MFG. CO., INC., NEW YORK

TO

ALL THE OLD CAMP-FIRE COMPANIONS

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FOREWORD

A PUBLISHING house is calling for a new book on the American Southwest, and has asked me to produce it. Now, the books and reports that have already been written on this region constitute a sizable library, and the number is steadily mounting. One feels like making a pretty careful survey of the situation before adding another.

Reviewing the literature of the Southwest, one is impressed with the substantial scientific and historical reports of the latter part of the last century, the more analytical though less convincing technical studies of recent times, and the flood of romantic writings of present years, among which only an occasional work gives promise of permanent usefulness.

Obviously, the book our publisher wants is of a different sort; perhaps a correlation for students and general readers of the essential facts in the natural history and the life of man in the Southwest; a delineation of the whole as a panorama of natural phenomena and cultural expression stretching across the ages; in short, a work that might aid in the comprehension of the forces which have combined to shape this fascinating region for a unique place in world history.

From the composite view-point of the naturalist and humanist the Southwest is seen to be a vast laboratory of nature and man. Two sets of phenomena are here integrated to a degree that is seldom found on the globe. Natural history and human history are here inseparable. The stupendous consequences of fire, water and wind in shaping earth structure are here in mesas, mountains, craters and canyons. Elemental forces have wrought out through the ages a region that

for scenery and climate is almost beyond compare. Geological horizons are exposed on a magnificent scale. The record of ancient plant and animal life is entombed in fossil beds, constituting a story that extends over eons of time. Existing life forms are arranged in zones that rise from low temperate levels to alpine heights. Fitting into this picture of mesas, canyons, forests and desert sands, as unobtrusive as the rocks, as characteristic as the plants and zoological types, is the animal, man—not dominating it, just a natural part of it.

The story of human life in the Southwest is mainly the story of the Pueblo Indians. Others have penetrated it; some few, as the Navaho, have adapted themselves to it and survived. Nomad tribes have swept over it, but they clearly did not belong. The study of the Pueblo Indians, ancient and modern, is the study of a people who never consciously recorded anything about themselves. Their history is largely culture history. The sources are the thousands of ancient ruins, with the physical and cultural remains that are preserved in them; the observations and records of the Spanish chroniclers who first disclosed the region to the Old World; and a few surviving communities in New Mexico and Arizona—all that is left of the "towns" that the first-coming Spaniards saw and from which they named the people, regardless of language or ethnic relationship, the Pueblo Indians.

One result of this study should be a better understanding of these survivors. They are the first Americans, a genuine nobility, the true autochthones—a silent people in a silent land, inarticulate, but revealing to those who can penetrate through symbol and song and ceremony the inner life of a people as imaginative, as gentle, as harmonious as any that have ever existed

on this planet. If the picture can be accurately drawn, it should constitute an essential chapter in the history of America and contribute something toward an understanding of our world and its people.

Clearly, the one who attempts this task should be about equally naturalist, humanist, artist and philosopher. Since the archæologist is something of all of these, he may be the best qualified to produce such a work. My all too limited knowledge of the Southwest has been gained through half an average lifetime spent in exploring and excavating in the region, accompanied by the study of as much of its abundant literature as is worth reading, supplemented by exploration and comparative research in other parts of America and similar areas of the Old World. In addition to this there have been years of teaching and lecturing before university classes and popular audiences. All this may constitute a fair preparation for the work here proposed. At any rate, an effort can be made to present some matured results of these activities.

I shall, with the kind permission of the editors, freely draw upon articles previously printed in literary and scientific magazines and reports, especially *Art and Archæology, The American Magazine of Art, El Palacio,* and publications of the Smithsonian Institution. An analysis of the archæology of the Southwest, entitled *Les Communautés Anciennes dans le Desert Americain,* submitted some years ago in fulfillment of the requirements for my doctor's degree at the University of Geneva, Switzerland, will still serve as a framework for the arrangement of southwestern culture areas. There is no way of knowing the extent to which these pages will reflect the minds of those who have been my guides in the study of archæology and

the social sciences. One's indebtedness of this kind is simply overwhelming. But the names of Alice C. Fletcher, William H. Holmes, John Wesley Powell, Frederick Ward Putnam, Adolph Bandelier, J. Walter Fewkes, Edouard Naville and Louis Wuarin continually come to mind as I organize the material herein presented.

Let all future students of human history in the Southwest remember that, regardless of where they have obtained their preparation for anthropological and archæological research, their real teachers must be the Indians themselves. Through a knowledge of their languages, arts, ceremonies, social customs, habits and ways of thinking, one may very slowly but certainly work back into the shadowy past. There is no other key. Start with what is well known and proceed through what is little known and at last the realm of the unknown will yield its secrets.

It should be noticed before reading this book that its plan is to set forth first (Part I) a summary of Indian culture history as it is now known to students of the native American race; in the light of this to follow (Part II) with a similar treatment of the Indian communities of the Southwest, concerning which every statement is verifiable or the contrary, since a considerable body of Pueblo Indians survive and live the ancient life. The closing chapters (Part III) under the title, "The Realm of the Pick and Spade," will have to do mainly with the ruins of towns that flourished and passed out of existence without having been seen by a member of the white race; of which there was not a survivor when the Spanish occupation began nearly four centuries ago; towns of which not a scrap of contemporary literature exists. In addition, the story will

be told of towns and provinces that have passed into the archæological realm during the period of recorded history—a process that may be called archæology in the making. One can readily imagine the uncertainty and guesswork of all this if we did not have the solid ground of verifiable, surviving facts to stand on.

To reconstruct from the available material the life and times of the ancient people of the Southwest is the task on which we are now setting out.

PART ONE

INTRODUCTION: GENERAL HISTORY OF THE AMERICAN RACE

ANCIENT LIFE IN THE AMERICAN SOUTHWEST

Chapter I

THE HUMANIZING OF A CONTINENT: THE AMERICANIZING OF A RACE

"Humanize: To convert into something belonging to man."

Before starting upon the study of human life in the great Southwest, some consideration of the general history of America will be necessary, for the history of the Southwest is only a chapter in the story of the single race that explored and settled a vast continent extending from Alaska to Patagonia. It involves no record of a succession of races, no account of conflicting nations engaged in the everlasting strife for supremacy that constitutes the major part of Old-World history; in fact, no consideration of nations at all, for that form of human society never evolved on the American continent.

Much of the ancient history of America must be recovered by the pick and spade, but the task of the American excavator is a vastly different one from that of the Old-World archæologist. Digging in the earth structures of the Mississippi Valley, the ancient pueblos and cliff-dwellings of the Southwest, the shell heaps of Florida or California, the pyramids of Aztec Mexico, the temple precincts of Central America or Peru, he is uncovering the works of a single race, the American Indian. There is no stratification of diverse cultures as in the Old World. Layers of débris, if any exist, represent simply the stages of development of the red

race. No evidences of Bronze-Age man, nor man of the old Stone Age, are encountered. Literary records are non-existent. Yet the archæological remains denote a civilization in advance, in some respects, of Old-World contemporaries; a race that without building cities, writing books, maintaining armies, erecting and tearing down nations, was nevertheless making history.

So one is compelled to blaze out new trails when it comes to the study of man in the New World. Traditionally, the history of America begins with the "discovery" in 1492. Now, that date does mark an important episode—the first piloting of sailing vessels across the Atlantic Ocean, an episode comparable with the first piloting of an airplane across the same sea. But neither feat was a discovery. I can not recall ever having heard the question asked, "Who discovered Europe, Asia or Africa?" There is no reason for asking it. I know of no reason for thinking that America ever was discovered. The human animal probably wandered back and forth over the Arctic lands without knowing or caring whether he was in Asia, Europe or America. There may have been for ages as much migration in one direction as the other. Man could not penetrate farther north, but to the south there were no barriers no matter which continent he was on. And he never stopped until he covered the habitable globe. Upon which continent he originated no one knows, nor ever will know. The quest for the "Cradle of the Human Race" must take its place along with other follies of science. It is as much a myth as the lost Atlantis.

If history is regarded mainly as a record of the actions of individuals and peoples in erecting and maintaining nations, then America holds little of historic

interest prior to four hundred years ago. If it embraces all the efforts and achievements of the human mind and all the forces that influence human evolution, then America affords another preeminent field for historical research. It molded one race, which, unmixed for millennia, spread over the vast continent, distributed itself in early stages into almost every conceivable kind of environment, responded as any animal will to every physiographic change. The results of this long experience are seen in the varying forms of culture—industrial, esthetic, social, religious and linguistic. The stages of development are well represented by archæological remains and the surviving intellectual possessions of the living people. The former class of evidence is buried in the débris of time, the latter submerged by foreign influence. Peoples of the desert, the plains, the mountains, the coasts, the islands, the snows, the jungles, still exist in their environment of ages. Probably nowhere else in the world can the reaction of a land upon its human population be seen so convincingly. Therefore, the prevailing lack of knowledge of the history of America can be remedied even in the absence of literary records. The process by which America was humanized is by no means a sealed book.

When in the course of time this continent was peopled, it enveloped its population in a profound continental isolation for some millennia. Ethnic unity was established and preserved. There was magnificent space in which tribes might develop without acute conflict of interest. There was infinite opportunity for adventure, for the development of leadership. Chieftaincy arose without resulting in kingship or overlordship. The sense of individual freedom was too great to permit of dynastic government. It was always of a representative

type. The race took its character from the soil. Its physical being, its unique mentality, related intimately to nature. Its variations in culture illustrate the response of racial spirit keenly alive to forces which meant so much in the life of the people that they were deeply venerated. These beneficent powers, recognized in the warmth of the sun, the fertilizing action of the rain, the reproductive response of the earth, brought the gifts upon which life depended, and for which man owed ceaseless gratitude. His delight was in the expression of that sense of dependence in song, in dramatic ceremonies, in the building and embellishment of temples for celebration, in the adornment of the body and of articles of domestic and religious service in color and in character symbolizing the forces so venerated. The life thus evolved was preeminently esthetic and religious, though these activities were so intimately organized with the industrial life and the social order that the result was a completely integrated culture. Thus America received and reacted upon its earliest human population. The result was the *Indian*—the aboriginal of the New World—a race Americanized.

America shaped a people of distinguished physical type. In every respect it bears the stamp of nobility. In bodily proportions, color, gesture, dignity of bearing, the race is incomparable. It was free from our infectious scourges, tuberculosis and syphilis, and the resulting physical deformities and mental degeneracies. It was probably free from leprosy, scrofula and cancer, and it is safe to say that nervous prostration was unknown to the Indian. It does not pertain to that superb physical composure and serenity of mind. The race held out well toward the end of the human life cycle. There were numerous centenarians. These physical

characters belong with matured, disciplined, controlled mentality.

There are those who will question the accuracy of this description. A more prevalent picture is that gained at transcontinental railway stations of beings of unwholesome appearance in the unclean nondescript clothing of white people. Many have no other impression of the Indian, and judge the race therefrom. We must do away with this picture and get the archæologists' view of America of a thousand years ago. We must see the race as it was prior to foreign contact. We would not judge the ancient Hebrews by the ghetto, or Anglo-Saxons by the down-and-outers of the city slums. The early misconceptions concerning the native Americans would be ludicrous had the results been less tragic. One much exploited tradition was that of savage cruelty. This well-nigh accepted belief was acquired during the period of eviction from the soil from which these people had derived their magnificent physical and spiritual character. It was a purely human reaction, and to have made it the predominant thing in the record of the Indian would have been unpardonably false.

Judged solely by the work of his hands, as seen in the remains of his monuments, temples, sculpture, fabrics and utensils, the Indian takes an eminent place among races. These achievements faithfully reflect his peculiar mentality and constitute his imperishable record. His unique intellectual attainments, his conceptions of nature, life, deific power, his exalted spiritual vision—these purely immaterial products of his mind to which he gave expression in dramatic ceremony and song—seem destined to disappear.

The European brought to the Indian world (America) a densely materialistic mind developed by

ages of experience in human society that could have no other destiny than that which has overtaken it. It was a racial mind formed by immemorial strife in a restricted environment—an environment which fostered distrust, war, destruction, armament for offense and defense. All this was accelerated by the discovery and use of metals. In the chaotic ethnic conditions of ancient Europe, kingship, overlordship, dynastic government, were inevitable, and individual freedom well-nigh impossible. European nations developed one common characteristic, that of using force for all purposes. Small nations fought for existence, large ones for expansion, powerful ones to impose their will upon others. Plans were devised from time to time for getting along with one another, but always to fall back after a brief trial upon the primal method of tooth and claw. Such a life tends to disintegration of cultural activities, industry, esthetics, religion and social order.

The European mind was not prepared to understand a race so different from its own in character and culture as was the native American. Its disposition was to subdue, to subjugate and to convert. One can readily understand the paralysis that would overtake a non-warlike race in such an unequal conflict. To subdue was comparatively easy with the superior material equipment of horses, guns, and training in destructive warfare. To convert was a different matter, involving the eradication of age-old culture, the destruction of the soul of a race.

To realize how nearly complete was the subjugation of the native American race by the European, one has only to see the abject servility of the peon Indian from Chihuahua to Peru—an enormous population hopelessly arrested. Contrast with these, tribes of the same

countries and of the United States and Canada which remained unconquered, "uncivilized"; those which retain their self-respect in the face of powers which would destroy their tribal existence.

It seems now that this first great experiment in the evolution of human society in America is at an end. The Indian race can hardly be expected to undergo further development as an unmixed people. Its destiny must be realized in connection with the aggressive and efficient race that broke into its continental isolation four centuries ago, and speedily made a pathetic wreck of its patiently evolved civilization. The best we can do is to save what we can of that priceless heritage and make every effort to comprehend it; then, since the development of our culture is largely a process of selection from the attainments of other peoples, avail ourselves eagerly of this which came from our own soil.

The task now is to investigate and understand the Indian culture in all its phases. The material side has received most attention and the languages have been industriously studied. In the recovery and interpretation of purely spiritual survivals, students are few, though it is the most inviting and most promising phase of American anthropological research. As the Indian enters into citizenship that is alien to his native culture, it is imperative that the record of his racial life be made complete and true. It is the problem of artist and poet, as well as of historian and scientist, to do justice to the race which has given to the world its best example of orderly, integrated racial life. The Indian is the result of the first and only process of Americanization that has been carried to completion. This may have some bearing upon practical problems of to-day.

There should be a destiny for the American Indian

more honorable than to be exploited as material for stirring fiction and spectacular exhibition. His is a race of splendid works and noble characteristics—a people who, in spite of the appalling adversities of the last four centuries, may by blending with its conquerors and at the same time preserving its own arts look forward to a future on the high plane of its ancient traditions.

Classical archæology has long had its constituency of scholars, consistently true to the ancient shrines, keeping alive the literature, art and drama of the people who set standards for the modern world. The Indian race has had few to maintain its sacred fires. The disposition has been to put them out rather than to preserve them. The race has been interpreted to the world almost wholly by its alien conquerors.

Between us and the Greeks, only time intervenes, and but a small span of that when we think of it from the biological point of view. Between us and the Indian is the racial chasm which no mind can quite bridge. No Caucasian will ever see with the eyes or think with the brain-cells of the Indian, the Oriental or the Negro. The mind, culture, character of a branch of the white race may become relatively transparent to us by personal contact or through study of cultural products; but the mind of the Indian remains a profound abyss, that of the Oriental an inscrutable mystery, of the Negro a portentous force.

It would do no harm to forget most of the efforts that have been made to explain the Indian race and let its works tell the story. The living Indian is not much inclined to explain through the usual channels. He is uncommunicative about himself—the antithesis of the white man. Literary record is absent and vocal re-

presentation not much used. But these can be spared, for the race has, like every other, revealed itself in its art. There was no conscious effort to do it. So the picture is true. What the race actually thought, felt, did, is clear. Words would only obscure.

The archæological heritage from the unknown America of two or three millennia furnishes an authentic history of the Indian people. It is their own picture of themselves, their testimony as to how they met and tried to solve the problems that all humanity has confronted.

There has been a singular tendency to think of the ancient masterworks of the race found in Mexico, Central America and South America as other than Indian art. It is necessary to repeat again and again that all native American remains, whether of plains tribes, mound-builders, cliff-dwellers, Pueblo, Navaho, Toltec, Aztec, Maya, Inca, are just the works of the Indian. Plain fiction and romantic archæology have a firm hold on the reading public.

Only a few peoples of antiquity attempted such gigantic works as did the Incas in Peru, the Mayas in Central America, the Aztecs and their predecessors on the Mexican plateau, the cliff-dwellers of our own Southwest. The monuments of Quirigua, Tiahuanaco, Teotihuacan, Chaco Canyon, testify to a physical and mental virility of the highest order. Masterworks of art, in sculpture, stucco and mosaic; achievements in design and color exhibited in the textile and ceramic arts, show highly developed and trained esthetic sense.

The ancient government of Pueblo towns was a model of statecraft worthy of Switzerland. The structures of purely spiritual character expressed in the mythology and ritual of the plains tribes, denote a

speculative religion, free from the mysticism of the Orient and the dogmatism of European faiths, based on observation of and reflection on the orderly processes of nature. The religion of the Indian measures up well with our own in spiritual character.

The life of the Indian, on the evidence of his cultural remains, was marvelously unified and socialized. Virtually every form of activity, esthetic, industrial, social, was at the same time the practise of his religion. In quest of food, sitting in council, taking part as musician or dancer or priest in the ceremony, developing the symbolic design on utensil or garment, building the sanctuary, erecting the monolith, dedicating the temple and embellishing it with color and plastic art—he was putting his whole spiritual life into it, and always with the thought of "the people," never of the individual or self. The race has left no personal history—only tribal or communal.

Solicitude for "the people," exaltation of the tribe, was and still is a constant trait of Indian character. If individuals became prominent as priests, warriors or builders, they were never personally glorified. Always it was: "The people thought," "the people went out," "the people built," "the old people say." Wisdom was of "the ancients." The ancestor was venerated but not mentioned by name. It is safe to predict that when the Indian hieroglyphic inscriptions of Central America are fully understood there will be found in them nothing of the boastful tone of individual power which characterizes the records of ancient Babylonians, Egyptians, Romans, modern Europeans and Americans, and probably very little of what is usually called history.

The native American race exemplifies better than

any other the influence of stone in human evolution. No traces of Bronze-Age man are encountered. To the end of its undisturbed epoch, it remained a "Stone-Age" people. It demonstrated the potentiality of stone unaided by metal. A surviving Stone-Age people, it may have been older as a race than the conquering Europeans, an Iron-Age people. Those terms are not to be regarded as denoting progressive efficiency in civilization.

In esthetic, ethical and social culture, the Indians surpassed their conquerors. In material development they fell short of the Europeans. In the use of physical forces they were the inferior race, as the ancient Greeks would have been, and the Hebrews. The races most advanced in material culture are not necessarily to be ranked as superior. Present indications point to their easy and rapid self-destruction instead of to the long maturity and slow decay of the races that placed the emphasis on the spiritual life. It is not certain that high material progress is conducive to racial longevity. Efficiency in civilization is mainly a matter of racial point of view.

The Indian race and its achievements, then, constitute America's archæological heritage and afford the subject-matter for the study of human history on this continent. It has a very intimate and particular interest to us in the United States where we have forcibly intervened in its destiny and where it is being slowly incorporated into our citizenship. There is outward submission to the white race, but with lack of understanding on both sides. Almost all trouble in dealing with the Indians would disappear if one group of facts could be clearly apprehended: namely, that it is neither through stupidity nor perverseness that peace-loving, order-loving Indians resist the well-meant efforts for

their betterment. It is simply the conflict between age-old ideals of authority, morality, justice—ours seeming as perverted to them as theirs seem to us. If it is their destiny to accept our standards, it should at least be made for them a matter of deliberate selection rather than forcible imposition. The results of the evolutionary forces in racial color, physiognomy, mentality, culture, can not be suddenly overthrown. The imposition of alien culture upon a subjugated people is a mistake for which the conquerors usually pay a high price.

If the Indian believes that a promise should be inviolable; that authority is the will of all and must be obeyed; that the observance of his own ceremonies is religion and ours paganism; that obedience to his own social order is morality and some of our customs revolting; that some things that look unholy to us are of the deepest spiritual moment to him; that he has rights with reference to his ancient shrines, ceremonies, sacred places, garb, moral and social canons, it is not to be put down to total depravity. He is simply guilty of belonging to the race that thinks it came "from the womb of the Earth-Mother" instead of the one that believes its common ancestor to have been fashioned "from the dust of the ground."

Viewed from any standpoint, it is a noble heritage that comes down to us from the long past of America —a heritage of experience, of thought, of expression, recorded in art, religion, social order; results of fervent aspiration and mighty effort; a race pressing its way toward the sun, running its course and passing into the shadows. Its study is the finest aspect of the conservation movement—an attempt to rescue and preserve the life-history of a great division of the human species.

Chapter II

TIME FACTORS AND EVOLUTION FACTORS

The time factors in American history have received an amount of attention in excess of their importance. The Indian race took little note of time. Seasonal changes were important because of their bearing upon the economic and social life of the people. So indifferent were the Indians generally to the recording of dates that in only one ethnic group between Alaska and Patagonia, namely, the Maya of Central America, do we find a minutely developed calendar. The Indian was content to order his life in conformity with the unvarying procession of day and night and the seasons. As to individual age, he recognized four great periods: childhood, youth, manhood and old age. It is unlikely that the recording of individual life in years was practised by any Indian people in pre-European times. They are still indifferent to it after some centuries of contact with the time-minded race. Probably no time unit less than the day was recognized. The claims made for the calendar of the Maya as an intellectual achievement seem to be unwarranted and it is easy to overestimate their astronomical knowledge. Their observations were merely those which any intelligent people might make on the heavenly bodies without the aid of instruments. There is no evidence of mathematical knowledge other than a rudimentary numerical system. This was capable of indefinite expansion though there is little evidence of their having carried it beyond the most elementary calculations. In the laying out of the temple or pyramid precinct there was no mathematical orientation other than that which could be accomplished

with the unaided eye. They achieved little in the field of exact science, and what we know as natural history was a world that they never entered. A halo of romance created by the Spanish conquerors has enveloped the people of Middle America, and conservative historians and archæologists have not yet succeeded in dispelling it.

Reverting to the time concept, it is difficult to explain the psychology of it, but all archæologists testify that the first demand of visitors to their excavations is to know the age of the ruins. Few archæologists seem able to withstand this insistence, or perhaps they share the curiosity of the layman, for almost every one of them feels called upon to hazard an answer. It must be admitted that in American archæology much tall guessing has been done and much discreet hedging has consequently been necessary as a few facts have emerged. Now, evolutionary sequence is important, but exact chronology is of comparatively little consequence in the history of a race like the American. Nevertheless, one is compelled to yield to some extent to the demand for dates. Since I do not regard the matter of first importance I am willing to accept tentatively the findings of those who take chronology more seriously. Without attempting to evaluate the methods or results of the efforts put forth by the students of American chronology except to admit that I find most of them unconvincing, I shall put down here a simple chart that answers my own purpose fairly well.

Time	Southwest	Mexico	Central America	Peru
15th to 20th Centuries A. D.	Recent Pueblo	Recent Aztec	Recent Maya	Recent Peruvian
10th to 15th Centuries A. D.	Ancient Pueblo	Toltec	Late Maya	Pre-Inca
1st to 10th Centuries A. D.	Pre-Pueblo (Archaic)	Archaic	Early Maya	Archaic

This arrangement assumes that the pronounced development of the Indian race took place in these regions during the last two thousand years. The first of these millennia, which may be called the archaic period in the history of each area, with the exception of Central America where the Maya led off by a millennium, was one of slow incubation of characteristic phases of American culture during which the people gradually adapted themselves to their respective environments and learned to utilize such resources as they were capable of appropriating, laying foundations for subsequent activities such as agriculture, industrial arts, building, social structure and ceremonial life. During this period their various natural food products, fruits, vegetables, etc., improved with the crude cultivation that was given them. No one "invented" or "discovered" agriculture. No one carried agriculture to other people and taught it to them. Man all over the world learned agriculture from his environment as naturally as he learned to get in out of the rain. Corn developed with primitive cultivation wherever it was indigenous, probably from some ancestral grass, and gradually spread over the continent along with man who was finding it a most satisfactory article of food. He found his corn improving as did all the rest of his natural food plants with his crude care. That the development of this plant was a prominent factor in the evolution of the culture of the native American race can not be doubted, but the biological history of corn is as yet an unsettled problem. Archæologists who speak with certainty concerning the region of its origin, and explain with assurance its dissemination from some point in the highlands of Mexico, have allowed themselves to be convinced upon insufficient evidence. What is actually *known* about it amounts to

exactly nothing. As the development of metal gave direction to the culture of the European race, laid upon it a destiny of mechanical industrialism, control of natural forces, self-sufficiency, vast material advantages, and potentiality for self-destruction, so corn helped to shape the destiny of the American race toward agrarian life, dependence upon nature, submission to powers outside of self, and a spiritual and esthetic culture, with marked slowness to adapt to changes in environment. However, it should be understood that corn was a variable factor in shaping aboriginal culture, in some groups dominant, in others negligible, depending largely upon specific environmental conditions. In some places mesquite had more to do with culture than corn.

It was probably during this first of our two millennia that most of the Indian industrial arts, such as pottery, basket-weaving, etc., got under way and spread with man as conditions invited. We are not to assume any fixed order for the development of these arts nor any set focus where they were invented and from which they spread. Basket-making preceded pottery in some places, and in other places vice versa. Man met his needs from what his environment afforded and developed new arts to supply new wants as he found facilities therefor. Then, too, an element of choice entered in. There are basket-makers to-day where materials for that art are scarce and facilities for pottery-making abundant, and the latter art not practised at all except in the crudest fashion; and there are places where this is exactly reversed. In short, man has usually refused to develop in obedience to a fixed order of progress. Those who lay out sequence patterns for human history in any part of the world, especially in regions of varied physiographic conditions, are always on thin ice.

The first half of the second millennium of our time program, beginning approximately with the tenth century A. D., witnessed the most intensive and at the same time wide-spread development of civilization that has occurred on the American continent. During these centuries ancient Pueblos and cliff-dwellers of the Southwest built their vast and numerous community houses; the mound-builders of the Mississippi Valley piled up their huge earth structures; the Toltecs of the Mexican Plateau built their enormous pyramids and richly embellished temples. A rebirth of civilization in Central America, where the Maya culture had flourished and gone down, resulted in the remarkable building epoch of North Yucatan. On the highlands of Peru and Bolivia, pre-Inca people were building extensive roads and marvelous places of worship in stone.

The above broad arrangement of American chronology is only tentative. It is derived from the fairly well assured interpretation of the Maya calendar and later systems that grew out of it in Middle America; upon the traditional evidences of surviving communities of the Pueblo Plateau, corroborated by the method of dating community houses in Arizona and New Mexico by the study of the tree ring patterns exhibited in the timbers used in their construction; a method that is being brilliantly worked out by Professor A. E. Douglass, of the University of Arizona.

There appears to have been a wave of cultural development during the early centuries of the second of our millennia that affected the entire continent. In a later chapter on excavations in Chaco Canyon, New Mexico, speaking of the ancient people of the Chaco and their contemporaries, I discuss this singular phenomenon, suggesting that there was an epoch of build-

ing activity in America, lasting for several centuries, finished long before the European invasion, and affecting simultaneously the people all the way from the American Southwest to the Andean highlands of South America, embracing the ancient Pueblos and cliff-dwellers of the Pueblo Plateau, the mound-builders of the Mississippi Valley, the pyramid-builders of the Valley of Mexico, the temple-builders of Yucatan, and the builders of the great public works of Peru. I compare this period of exuberance, which resulted in a piling up of architectural monuments such as has rarely occurred anywhere in the world, to the epoch of cathedral building in Europe in the Middle Ages. In the Southwest only did it take the form of house-building for residential purposes. In the other parts of the continent it was mainly an expression of religious fervor which suggests the heaping up of great mounds far in excess of actual needs by insect communities. The cause of the decline that followed this period of exuberant activity in every one of these areas and which occurred long before the coming of the Europeans is one of the most difficult and important problems of American archæology.

It has been noticed, possibly with some surprise, that I ascribe no great antiquity to the American civilization. The limits of the period above analyzed are pretty certainly defined and on the question of early man on the American continent I have no settled convictions. I am enthusiastically for all the efforts that are being made to find evidences of man's presence in America in paleolithic or earlier stages. The interpretation of such evidences that have been presented up to date has not been convincing. The antiquity craze of American historians and writers that has been so prevalent of late

called forth the following words of caution from William H. Holmes, dean of American archæologists; a caution that was needed and which, coming from such high authority, must be taken with utmost seriousness.

"Students of American antiquity can have no objection to the publication . . . of interesting items regarding reported discoveries of human remains and objects of art of supposed great antiquity, but I beg to offer a word of caution to the reading public regarding the danger of hasty determinations and premature publication.

"There recently appeared accounts of finds of human relics in caves and rock-shelters of the Missouri Valley to which great antiquity is assigned, comparison being made with the Egyptian period of Tut-ankh-Amen. Other publications of recent date announce discoveries of kindred nature calculated to mislead the overcredulous public. The writers do not hesitate to assign an antiquity of ten to twenty thousand years, but they do not present the least authority for these assignments. The remains described may be five hundred years old, or less, and there appears no reason to conclude that they do not belong to the Red Indian of comparatively recent times. Still more aggravating to the conscientious student of antiquity are the reports, definitely attributed to explorers representing scientific institutions, of the discovery in Nevada of the remains of a buried city five miles in length. This city is assigned to a period and grade of culture comparable in these respects with the monuments of Egypt. When fully explored, it is highly probable that the 'great city' will be found to be the work of the well-known Pueblo tribes of the arid region. The published reports of these discoveries are calculated to grossly mislead the public, and whether authorized or not by the explorer, deserve to be characterized as the jazz of American Archæology.

"Of kindred nature are reports widely published . . . of discoveries of remains of great antiquity in

California, which remains are, however, doubtless properly attributed to the Digger Indians. Just how much of these announcements are due to the news gatherers and how much to the actual explorers cannot be ascertained, since the actual reports of explorers never reach the public.

"That the newspaper writers are not wholly responsible for these hasty reports and regrettable misinterpretations is made apparent by the antiquity craze that takes hold of many untrained beginners in the field of American archæology. This is illustrated by publications of recent work in Florida conducted by the explorers who, apparently blinded by antiquity predilections, prefer to consider the evidence found upside down. The trained archæologist having only the facts in view, begins on the surface with the known peoples —the American Indian—and seeks to follow his story downward as recorded in successive deposits until all traces assignable to the particular people and culture disappear. On the other hand, the explorer who seeks proof of the assumed great antiquity of man in America, prefers to begin below with a hypothetical race of geological antiquity, assigning all traces of occupation by man from the bottom to the top to a race and a culture which exist only in his imagination."

Chapter III

A NEW-WORLD CULTURE TYPE

"For East is East and West is West
And never the twain shall meet."

—Kipling.

From the intellectual point of view Kipling was right. Orient and Occident took their separate roads in the evolution of their culture and those roads diverged so far through the ages that their coming together is impossible. Physically, Orient and Occident have met decisively and the Oriental gets the worst of it. The materialistic road taken by the European led, through the development of metals, to physical conflict, and, aided by weapons of warfare, to all the possibilities of 1914-18; likewise, to the steam engine, the ocean liner, the railway, the airplane, and instantaneous communication throughout the world.

To the Asiatic the splitting of seconds, or even of days, is incomprehensible. Asia has been the timeless continent, which permits of contemplation, of spiritual adjustment to the universe. So it has been through the centuries that Orient and Occident have been incomprehensible one to the other. Nowhere else in the world has this lack of understanding had such tragic consequences as in the so-called New World. Here the twain have met, strictly on the physical plane.

Out of the soil and winds and life forces of America came a type of society preeminently esthetic and religious. Industrial life developed only to the extent of meeting immediate physical needs. Spiritually, the Indian was an Oriental and is to-day. With the closing of the fifteenth century, there was disclosed to the

European a new world, peopled by a race of distinguished cultural type, so different from the European that after four centuries it is about as badly misunderstood as it was at the beginning. Here was a race of men to whom personal glory had no meaning. There was almost no individualism. No record was kept of the achievements of warriors, priests, architects or artists save in the evidences of a splendid culture. These told of the nobility of a race expressed in esthetic life. There was little specialization. No individual singer performed for the entertainment of the crowd. There was no class of trained artists. All were artists, though no master ever signed a painting or statue. No architect or politician got his name on the corner-stone of a public building.

It is to the glory of the American Indian race that it developed a type of government entirely different from that of the European and more effective. The welfare of the people was the supreme end of government. If individuals became prominent, they were never personally glorified. In America the idea of monarchy had no place. The European, and in this I include the American of to-day, relinquishes painfully his preconceived ideas. "Empires of the Montezumas" seem necessary for his intellectual satisfaction. May we now drop these childish classifications and see the Indian in the light of his finer achievement in government; that is, a type free from monarchical authority? The typical government throughout the Americas was republican. There were numerous variants, but the fundamentals remained constant. There was no kingship and could not be in such a social structure, not even among the advanced civilizations of Mexico and Central America. Nomenclature is persistent and hard to break away

from. Europeans could see in a powerful chief only a king. If he happened to be the chief over a number of chiefs of towns or tribes temporarily associated for defense, as Montezuma in Mexico, he must be an "emperor" and his domain an "empire." Hence the "Empire of the Montezumas"—the old and new "empires" of the Maya. These Indian emperors, kings, princesses, empires, etc., are the creation of Spanish chroniclers and romantic historians and archæologists, based upon traditional European patterns of government. The Indians have never had to junk any royal crowns or thrones or dynasties as Europe has at such bloody cost. They got started in a different direction from ours. The perfectly ordered community was the aim and end and agency of government, and there organization stopped. All the people participated in all the community activities, government, building, worshiping, making war when combat became inevitable. Though there were many valiant warriors there were no Napoleons.

To people educated under our traditions, it is well-nigh impossible to conceive of civilization without nationality. "National aspirations," "national honor," these are ideas that go with the white skin. Our passion for organization, for offensive and defensive alliances among societies and states, grows out of the propensity for meddling in one another's affairs which seems inherent in European peoples, including modern Americans. Alliances and leagues, treaties and laws innumerable testify to this inability to get on without interference with one another.

Whatever the forces were that directed the evolutionary processes in the European race to the white skin, the contentious spirit, the passion for individual glory,

the determination to rule, they were and are inescapable. It is not possible for the European to conceive of a better state of society than that attained by way of mighty ambitions, mighty conflicts, mighty individual power. He succeeds in formulating a body of doctrines with which to transform the social, political and economic state of man. Given the opportunity to try it out (witness Russia), he proceeds by the only method the European knows to direct his ideal, arriving at just what the European always has arrived at by European methods: namely, the state organized by force, maintained by force, depending upon force for its existence. When Europe accepted, theoretically, an opposite ideal for human society and took over an Oriental conception, it did not long handle it by the gentle methods of Galilee, nor did the results bear much resemblance to the spiritual structure exemplified in the life and teachings of the Son of Man. Splendor of priesthood and magnificence of church, inquisition and stake, slaughter of Christian nations by Christian nations—these are curious derivatives from a social order founded on humility and tolerance and the "love thy neighbor as thyself" idea. But it is the European way.

America had a different effect upon its human population. Whatever the forces were that directed the evolutionary processes in the native race to the attainment of the red skin, the idea of life in harmony with the program of nature, of satisfaction in esthetic and spiritual activity rather than in material progress and power, they did their work as effectively as the Old-World forces. The culture of the Indian can only be destroyed by killing the Indian. The Pueblo is the best surviving example of native American culture. In it are preserved the physical, intellectual and spiritual

elements that characterize the whole native American race.

From New Mexico to Central America the sedentary Indians developed a system of land tenure which was eminently satisfactory to them. There was no individual ownership of land. Title was in the community, though heads of families enjoyed practically permanent tenure, conditioned upon a proper use of the land and the performance of a fair share of the community work. Moreover, no community appropriated more land than was necessary to provide for immediate needs. What saving in blood and treasure would have accrued to Mexico if its ruling class during the past four hundred years could have understood and granted to its Indian population the system of land tenure which it thoroughly understood and had enjoyed for ages! It is safe to predict that Mexico will become a permanently tranquil country when its governing class restores to the Indian population secure possession of community lands.

Equally hard to understand was the Indian's religion. The deification of nature's mighty powers, illustrated in the exhibition of fetishes sometimes grotesque in character, and expressed in elaborate ceremonial performances, connoted to the European only a gross paganism to be uprooted by conversion to the true faith. The symbolism of the Pueblo Indian of New Mexico is to this day accounted obscene by many to whom the realism of the modern social dance gives no shock whatever. During a quarter of a century of experience and studious observation among the Pueblo Indians, I have never seen a ceremony that was obscene from the Indian's point of view. On the whole, the Indian's view of life, of continued existence, of deific

power, manifested through all things in nature, constitutes a religion by no means repugnant to the most advanced thinkers of the present day. There was general belief in the continuity of life. No tombstone nor monument marked the grave of any one. The "ancients" needed no memorial to recall where the cast-off body was laid. When you read in the public press that ancient American tombs will soon be excavated that may rival that of the much exploited Tut-ankh-Amen, remember that the early inhabitants of this continent didn't believe greatly in tombs and didn't build any of much consequence. When a ruin bears the classic name of the "Temple of the High Priest's Grave," put that with the "Old Empire" myth, the "Treasure of Montezuma," the "Seven Cities of Cibola," and the fabled "Gran Quivira." They had no "high" priests, and plain every-day priests went into the common burial-place, the refuse heap, the crevice in the rock, the niche in the cave wall, the trench under the floor, or on to the funeral pyre. The body, when of no further use, was regarded about as we regard a corn husk. The community refuse heap is an epitome of a people's history. Into it went everything pertaining to life and culture, including the body itself when it ceased to serve the spirit. It is the archæologist's happy hunting-ground.

A very simple episode in life was the translation to the spirit world of the ancients, so simple and inconsequential that some tribes had no name for it. Life went on with its ceremonies and mundane concerns pretty much as before, save that the mighty powers were easy of access to the ancients and so the latter became very intimate intermediary beings. At every feast they were present, invisible in themselves, impersonated on many occasions, to the end that the people should never forget

the gifts of the past. It was real veneration that was accorded to the ancestors; not worship, and with no memorials in stone or bronze. True, the Indians placed offerings of works of art or utility, or ceremonial objects or food upon or in the grave, anything that the departed cared for; but not that the spirit must have food for its journey as has been persistently said. It was in the Oriental spirit. A smart American remarked to a Chinaman, "You put that stuff on your friend's grave. You think he comes back to eat it?" The Oriental replied, "You put flowers on your flen's glave. You think he come back to smell 'em?" So with the Indian, though the body is forgotten, remembrance and veneration follow the spirit.

One of the amazing things in our civilization is our cult of the dead. Think of our funerals, ceremonies, tombs, mausoleums, ghosts, devils, spirits, angels, heaven, hell, purgatory, celestial cities, pearly gates, streets of gold, judgment day, reincarnation and a thousand other concepts concerning the unseen world and unseen powers. Consider if after all it gets us much beyond the simple Indian conception of the uninterrupted life: the body to the refuse heap, the spirit to the dwelling-place of the ancients.

The student of humanity would like to know what is to be the destiny of this native American race. Are its sacred fires permanently quenched, or can the flames of the spirit that produced the temples of Central America and Mexico, the dramatic ceremonies of the Indians of the plains, the architectural wonders of the ancient Pueblos and cliff-dwellers be revived? If so, the gain to the Occidental World will be priceless. What the race actually thought and felt and did is preserved through the cultural record. To recover this

and bring it again to the consciousness of the Indian is to restore to him the knowledge of a splendid past and inspire again the self-esteem without which no human being can go on. How important it is that this record be conscientiously recovered and accurately represented!

A growing intelligence with reference to Indian education has of late revealed special abilities in the race which may well be fostered for the good of the Indian and for our own enlightenment. Esthetic powers were rendered dormant in our effort to impose an alien culture. The Indian is by nature an artist. Emerging from the race at the present time, we see a Tsianina, admired and beloved by all music-lovers of the land; an Oskenonton, growing in power as a singer to the glory of his people; among the artists a Kabotie, a Velino, an Awa Tsira, taking rank with the painters of the white race. Who knows what unsuspected talents may be aroused in this hundred per cent. American race if given equal opportunity with our own? It begins to look as though the native American may yet be enabled to recover a noble heritage and realize a destiny worthy of any people that the ages have brought forth. Should this come about, it will constitute a tribute to our intelligence and add glory to our own culture.

The Indians recorded their history not in words or deeds but in art. This is true of all the more advanced peoples of the American continent. Here a race without literary characters revealed its life-history in a book that is trustworthy.

When the curtain was drawn and the New World disclosed, a new type of humanity came into the world-picture. A culture was there revealed in process of development which was unfamiliar to Europeans in al-

most every respect. After four centuries we have a fairly well established picture of the physical character of the native American race, but no generally accepted evaluation of its culture. Physically it has survived subjugation and held its own numerically.

In Middle and South America it constitutes a major factor in population. In several countries the Indian population predominates in numbers. In no country in America is it a negligible element, but in none is its potentiality in the national life recognized. The modern American nations have been about equally unintelligent in dealing with the native race. The makers of modern Mexico have been striving to build a nation on a European pattern, ignoring the fact that a vast majority of its population, from ten to twelve million or somewhere between seventy and eighty per cent., is Indian, entitled to a form of government to which it can adjust its life. In the United States the small but virile Indian population, probably a third of a million, has generally been treated as an alien element to be absorbed. Our policy, insofar as we have had one, has looked toward the elimination of the Indian, not by violence, of late, but by assimilation.

In short, we have acted strictly upon our traditional conception of racial superiority—the theory that only peoples of high material achievement constitute the superior group; that lack of material advancement is the index by which races are to be classified as backward—a theory which ignores a number of factors in cultural evolution and relegates to the inferior class all who are not characterized by our brand of efficiency. A racial intelligence quotient could only be arrived at by measurement of esthetic power, of social and spiritual judgment, of linguistic attainment, along with material

efficiency. In such a scheme of tests, standardized by a committee of Orientals, we might land in the moron group.

At any rate, only after most serious, unbiased consideration can we afford to reject the cultural attainments of any mature race as unfit for perpetuation. Activities in all lines of endeavor have played their part in the making of the human mind. All have been potent in the building of the brain of man. All must have due consideration in the problems of civilization.

It is precisely for this reason that I have persistently stressed the study of the cultural achievements of the native American race in comparison with those of contemporary peoples throughout the Old World. Upon what cultural road had the race traveled up to the time of its becoming known to Europe? Had it progressed thereon beyond the possibility of radical change? What was the effect of the European contact? Is that result irrevocable?

Viewing the aboriginal arts of the Indian world, one notes the noble architecture of Middle America, with its splendid sculptural embellishment; the extraordinary fabrics of Peru; the beautiful pottery of the American Southwest, and the dramatic ceremonies of the plains and desert tribes. In all these is the infinite play of fancy, the unerring color sense, and the matured feeling of order characteristic of every esthetic race of all time. Clearly, the ancient Americans were far on the esthetic road and held this course through the ages.

In the entire range of American archæology, embracing some millennia, while evolutionary sequence is obvious, especially in architecture, sculpture, ceramics and weaving, it is not possible to assert of the most highly developed groups, such as the Maya of Central

America or the ancient cliff-dwellers of the Southwest, that we have traced their arts back to unmistakably primitive levels. In esthetic attainments they rivaled the ancient Egyptians; they were fairly comparable to the Orientals; yet their civilization was attained without the aid of metals, of domesticated animals, of developed means of transportation, and other than the most elementary mechanical devices. A race of eminent achievement in certain phases of culture, it remained industrially in the Stone Age, and we find little to indicate that it would ever have emerged from it even if unmolested by the European. In short, the cultural type was fixed. The experiences that had developed the race physically and given it its unique somatic type had been equally potent in building the racial mind. It was not destined to become an industrial or commercial race, but to take its place among the peoples of the earth in whose civilization esthetic and spiritual values were exalted; in whom the practise of the arts, the exercise of social and religious impulses, dominated the racial life.

As pointed out previously, the absence of individualism in the aboriginal American race was a predominating trait. To the community all individual activities were subordinated. The community functioned as a unit in the ceremonial, as in the social and industrial life. Throughout America small communities, comparable in population to our villages, prevailed among the sedentary peoples. There was not on the entire continent an aggregation that could properly be called a "city." The coercive nature of the small group tradition is seen to this day in the persistence of community style in villages where decorative arts survive. For example, the student of ceramics in the Rio Grande Valley readily assigns any piece of pottery that comes to his notice to

the village where it was produced. Skill in the arts must have been universal. The amount of construction in stone and accompanying sculptural embellishment displayed in the small village ruins of ancient Mexico and Central America indicate entire community participation. The vast quantity of pottery recovered from small ruin-mounds of the ancient Pueblos points to the same thing. No mechanism for duplication was ever used. To this day the Indian resists quantity production in his arts.

The most extraordinary characteristic of Indian culture is to be seen in the unification of all its elements. Religion, art, social structure, industries—all coalesce in daily life. The Indian is profoundly religious. His fundamental belief is in all-pervading, deific power. This finds expression in dramatic ceremonial with musical accompaniment; in symbolism which dominates the performance of his drama dances, in color and design in his decorative arts, in the construction and use of his sanctuaries, in the order of his social life, and in his most commonplace daily tasks. Planting is a ritualistic performance. Hunting is ceremonially ordered. In pottery-making it would not be possible to say whether the utilitarian, the esthetic, or the religious motive predominates. To this integration of all the activities of life is due the steady, imperturbable character of the native American. Certain it is that the supreme endeavors of the race were toward peace, tranquillity, harmony with nature and between tribes and communities. Those who believe in the unification of the arts as a means of guiding the nations of the world into sympathetic and orderly relations, have substantial groundwork for their faith. In the race of mankind here under consideration, the evolution of the idea may

be observed and its tendencies noted. While the process was violently interrupted, it progressed far enough to demonstrate the fact that, given reasonable time for maturation, benign influences may be organized in human society that will make for orderly, effective civilization not attainable through force. The end of the European race, assuming that peoples, like individuals, must of necessity reach their end, would inevitably be from internal violence; that of the Indian from subjection from without, decline in spiritual power through the pressure of a self-styled "superior" race.

In contact now with all the races of the world it becomes imperative to work out a just measure of human values; to take notice of the distinct factors in civilization, reconsider the terms "superior" and "inferior"; acknowledge that fitness to live and probability of survival do not depend on material efficiency and that the civilization that rests on force is probably the most unstable of all; that esthetic and ethical values are persistent beyond all others; that the races called by us inferior have qualities that are priceless to human society and that in the discovery, recognition and cultivation of the special abilities in the less powerful races lies our soundest insurance against spiritual decline and extinction by way of our own violence. The long-lived races of the East have stood high in ethical and esthetic culture. European nations have enjoyed rapid material development and suffered early disintegration.

It will be interesting to see if the Indian can come back in art to something of his ancient power. If so, he probably can in other lines of special ability. It has been customary to assert that the race is doomed, but such is not the case so long as its culture lives. When that is destroyed utterly, the soul of the people is dead, degra-

dation through loss of self-respect is inevitable. But the spirit of the Indian race is alive. Its greatest day may be in the future in the sense that it may contribute to the American race that is in the making some of its finest elements.

Chapter IV

SUMMING UP

Sounding the remote sources from which flow the cultural activities of peoples, one finds in ancient America conditions that invite the reflection of scientist and artist and philosopher alike. These we should have clearly in mind for they are the agencies that fashioned the American race, gave it its distinguished character, built its distinctive racial mind, drew out the spiritual qualities which found expression in the arts, and prepared a tragic destiny.

America was a continent of isolation, of vast solitudes, of limitless spaces, of well-defined physical areas, such as the western plains, the southwestern desert, the Mexican table-land, Central America, and the high plateau of Peru and Bolivia. It invited an expansive life. There was nowhere any problem of over-population. There was little excuse for conflict between tribes. There was room for all. Natural resources provided what man needed without intensive effort. There were everywhere conditions of nature which stimulate the imagination, induce reverent contemplation, bind man to his soil. These conditions were favorable to the development of religion, esthetic life and social structure. There was not the intensive struggle, the conflict of interests which focus the thought of people on material things and intensify practical activities. Moreover, the race was of a single origin, essentially Oriental in its psychology which was fairly well established before reaching America.

This was the antithesis of Europe, where for millennia our forebears, ethnic breeds of little degree of

like-mindedness, fought for the frontiers which they deemed essential to existence. There has been incessant conflict of interest, the struggle for subsistence, for control of the routes of trade and the freedom thereof, for economic advantages of every sort, for a place in the sun, for strategic positions of defense. All this produced the seething caldron of warring nations, of ancient hatreds that have grown and intensified for ages. While we dare to hope that Europe may some time be composed into peace, we do not overlook the plain truth that the conditions above described have compelled the European peoples to fight for every possible physical advantage in the past and may in the future. Swift advance in material civilization, mastery of forces, constructive and destructive, have brought us to the pinnacle of material supremacy which we enjoy, or, at any rate, spend our lives in maintaining.

During the centuries of European advance, much of the Orient and all of America kept the tranquil ways of the Stone Age. Racial mind was in the making just the same. The activities of these races, whatever they were, produced a brain development equal to any in the world and mental power unrivaled in certain ways. But these ways were spiritual rather than material. If we could represent with a series of curves the progress of the various types of culture in the races we are discussing, it would seem that with the Europeans the material curve mounts to great heights, while with the Orientals and the native American race it remains at a low level. When we consider the development of spiritual culture, the curve is reversed. The European remains low and the other mounts. Europeans are people of mechanical inventions; Orientals, and the Indians, of religious conceptions and esthetic value.

Mind is made by its experiences, and experiences are partly a matter of choice. It would seem that the spiritual pursuits, art and religion, of those whom we call inferior, have been quite as potent in developing brain as have our material activities. We lump these races together as heathen, displace their culture with ours, which may be good for us but deadly for them. We give them a religion which is not ours to begin with, and demonstrations of efficiency which they rarely envy, while they calmly wonder why these violent peoples of the West never stop for the solid enjoyment of sitting in silent meditation upon the graves of their ancestors.

The result when civilizations that rest on such different foundations come in conflict can never be in doubt. The question of ultimate stability may remain open. We have not made ourselves entirely secure in our greatness; our faith in ourselves has been shaken recently. But we have wrought tragic results on the peoples whose civilization rested on foundations unlike ours. Of these the best example is the American Indian.

The history of the first Americans could not be written without knowledge of these fundamental conditions of culture. The race was essentially esthetic. It developed no machinery and no literature, but out of its rich experience grew profound views of nature and of man's relationship to all created things. Art in its various forms afforded the Indian his means of expressing what he thought. One is amazed, in checking the attainments of the Indians in comparison with those of other races, at the scope, purity, integrity and universality of their arts.

The western plains were peopled by tribes of fine physical and mental development which was the result

of age-long experience. The drama was the foundation art of the Indians. It was the least material of all arts. With music, from which it was inseparable, it afforded a channel of expression sufficient to the needs of the people where conditions were not favorable to the arts that required material accessories. The great plains did not invite permanent home-building, but out of that spacious environment came an immaterial culture, a spiritual structure that is almost beyond compare. Rich in imagery, poetry, symbolism, religious fervor, in every emotional quality, it has all the elements of greatness, even to the details of dramatic form. In the very nature of this culture it can not long survive the tribal organization. Of plastic art, the plains Indians had little. In painting and building, their achievements were rudimentary.

The American Southwest, region of unalterable deserts, exercised the same stimulating influence upon the human mind as the great plains. Out of infinite spaces came the same profound reflections upon nature and man's life. It opened the same major channels of expression, induced the same art forms. Drama with song was the basic art. As the conditions there invited fixed abode, building became an important occupation. Cliff-dwelling and pueblo architecture was not eminent in esthetic character. There came, however, vast development in ceramic art. Like the drama, it was universal in the region. In both, the entire people participated. It is clearly related to the ceremonial life, for its decorative motifs are made known when we understand the religious ceremonies. Their search for beautiful colors, their discoveries among minerals and plants of the elements with which to produce paints for potteries and dyes for fabrics, resembled the intensity

with which the Europeans studied metals and discovered hidden forces of nature. They experimented with fibers, barks and grasses and attained high skill in weaving textiles and baskets. Their preeminence was in decoration, beginning with the ceremonial painting of the body, the extension of the same decorative symbolism to the costumes of the dance and the embellishment of practically all articles of use. Here they rose to the levels of the most esthetic peoples of the Old World. The pottery of the ancient settlements of Chihuahua, of the arid Southwest, challenges comparison in color, form, and mastery of line with that of the Greeks and Orientals.

It is in the Southwest that we first notice that most striking thing in native American culture, the integration of utility and beauty and religious thought. The article of every-day use was invariably beautified and almost always some phase of religion furnished the motive. Utility and beauty, art and religion, were inseparable. In utilizing life-forms for decorative patterns, in play of fancy with primary motifs, in symbolic expression of what life and nature meant, the ancients of the Southwest rose to sublime heights. Their sculpture remained rudimentary.

In Middle America three major centers developed in ancient times. These were the Mexican table-land, Central America, and the plateau of Peru and Bolivia. In their civilizations they were much alike. As with the northern Americans, the dramatic ceremonial dance was the basic art. As in the Southwest, decorative art in ceramics and the weaving of fabrics flowed in natural evolutionary course. The ancient Peruvians made textiles that are furnishing patterns for the most discriminating manufacturers of America. The plumage

of tropical birds afforded material for gorgeous robes, and, among the Aztecs and related tribes, featherwork was one of the most conspicuous arts.

So far the arts of Middle America paralleled those of the Southwest, but two major arts were added: architecture and sculpture. The former follows the evolutionary course of which we find the rudiments in the North. It was a product of the religious life, integrated with the social structure. While fine temple architecture was far advanced in all three of the Middle American centers, it reached supremacy in Guatemala and Yucatan, the land of the Maya. The temple precincts of this region rival in beauty those of any part of the ancient world, and they have endured with the most enduring.

Along with his other accomplishments, the Indian of Middle America developed sculpture, and so generally was this art practised that from Aztec Mexico to Peru few miles are traversed without seeing the work of the ancient sculptors. It ranges from the exquisite little carvings in jade and serpentine, and molded ornaments of gold, up to the enormous sandstone monuments of Quirigua; while the temples at Palenque, Chichen Itza and Uxmal, embellished in stucco and low-relief, are as much achievements in sculpture as in architecture. Hardly anywhere else in the world was there such a general application of sculpture to architecture as in Central America. So consistently is this order held throughout Central America that where a written language came into existence, as with the Maya, the inscriptions constituted an essential part of the decorative system.

When we consider that these monuments of architecture and sculpture were executed with only the most ele-

mentary machinery, without metal tools, with the mechanical equipment of the Stone Age, it starts new questionings as to what civilization really is. The arts of all the earliest Americans were of the Stone Age, yet we would require all the facilities of our advanced civilization to imitate them, and the spirit of their art we could never reproduce. America was a continent of distinguished culture while Europe was barbarian.

One is tempted to consider to what extent these natural conditions of America, these subtle forces of the Western World, which operated in the past to produce so definite a type of civilization, may be potent to influence the new race that has invaded its ancient solitude and rudely interrupted the cultural evolution of its first human population. The conditions are vastly different. The human animal on which these forces have now to react has nothing of the homogeneity of the first American stock, but is of diversified breed. It is for the most part European in origin, therefore of a type whose aspiration has long been to subdue and transform nature rather than to yield to its benign influence and be absorbed therein. The European seeks in nature every force that can be conscripted to serve a civilization founded on force, dedicated to supremacy of force, destined to stand or fall as the ideal of force prevails or declines in human affairs. The native American, like the Oriental, viewed nature as the great source of all existence, found in contemplating its orderly processes the principle for the ordering of his own life, sought in its mysterious forces not something to be captured and made to serve him, but harmonies that he might share to the profound satisfaction of his soul. His was a life of the spirit; existence in a world of unreality, of naïve, spiritual experience. Such a mind is the prod-

uct of space and solitude, the play of thought induced by deserts, prairies, mountains, forests, skies and elemental forces not analyzed, classified, controlled and reduced to the commonplace.

Isolation has been as potent in producing cultural types as in conditioning the biological variations that lead to new species. Life forms and cultural forms exhibit striking parallels in their evolution. Isolation no longer exists in America in sufficient measure to induce strong new variations such as took place with the first white settlers. We have in our generation witnessed the disappearance of those early types. Yankees, southerners, westerners are no longer distinguishable. They were products of colonial isolation which is no longer possible. With the floods of foreign immigration of recent decades they are swept into the stream of mongrelized population and will exist in the future only in our national traditions.

Nevertheless, the deeper influences of climate and soil that produced the aboriginal Americans and endowed them with a culture as definite as the color of the skin, must still exist, and, to some degree, retain their potency over the minds of men. They are profoundly felt in the elemental conditions of the American Southwest. It is a region that man finds difficult to possess and modify. On the contrary, he finds himself absorbed in it. The noted development of art in the Southwest in recent years may be a happy portent of something of which those who are participating in it can hardly be aware; a movement that is obeying the influences that formed the mind of the earliest Americans and which, if followed in the spirit of reverence, may teach the lesson of the ages—that a people, to be truly great, must feel to the depths of its soul the forces

that make it a nation and urge it to reflect the sublimity of life that is kindled by a noble environment.

This may serve as a starting-point for the study of the *Ancient Life in the American Southwest* that is now to be undertaken. In the light of these thoughts on the American race as a whole, the life of the Indians of the Southwest may be understood. At the same time it must be remembered that there are many exceptions to all generalizations, and that in such a science as archæology there is bound to be infinite diversity of observation and conclusion.

PART TWO

CONTEMPORARY ANCESTRY

OLD AND NEW

Whatever is Man in the sons of men,
Whatever is staunch and true,
We draw from our sires, and their sires again
And mothers of mothers who mated when
The World and its Heart were new.

Whatever is Faith, in the human heart—
And higher than human ken—
Is older than College or Church or Mart,
Ordained to bloom, from the very Start,
In the Man who died for Men.

Whatever is Love in our Life to-day,
And longer than Life is long,
Is no new plot of a clever play—
When Eden was lost, Love kept its way,
As old and as sure as Song!

And we are measured ourselves, at last—
Faith, Love and the Strength unseen—
By naught we add to that templed Past,
But only, how well can we hold it fast,
How grateful we keep it green!

—Charles F. Lummis

Chapter I

THE PUEBLO INDIANS

1. General History

The Pueblos are the town-dwelling Indians of the Southwest. They are now reduced to seventeen villages in the Rio Grande drainage of New Mexico, Zuni in the western part of that state, and eight Hopi villages in Arizona. In 1540 when first described by Castañeda of Coronado's expedition, there were eighty inhabited towns, sixty-six in the Rio Grande Basin, seven at Zuni and seven at Hopi. So in a little less than four centuries there has been a shrinkage of over two-thirds, based on the number of inhabited towns. Nearly seventy per cent. of the villages of 1540 are archæological sites now. But it is not the encroachment of the white man alone that has been responsible for the decline of the Pueblo communities, as is popularly supposed. Their own rebellion of 1680 ruined a great many of them. Comanche, Navaho, Apache and other raiding tribes wore down some of the frontier towns to the vanishing-point. Thus, the decline of the Pueblos during the historic four centuries can be accounted for.

The great shrinkage came before 1540. To account for it makes good guessing for the archæologist. The extensive San Juan Valley of Colorado, Utah, New Mexico and Arizona had no Pueblo population in 1540, but in ages prior to that the whole valley and all its tributaries teemed with people. The Mesa Verde and the Chaco Canyon were the greatest centers of community life. The peoples of the former were cliff-dwellers, this being a term of location only, and those

of the latter lived in enormous community houses in the valley and on the mesa tops, some of them many times over as capacious as any of the community houses of to-day. All were true Pueblos—sedentary, town-dwelling Indians. There are in this valley and its tributaries the ruins of hundreds of towns.

In the upper Rio Grande Basin, where most of the present Pueblo villages are, were such foci of population as the Pajarito Plateau west of the present inhabited valley; a region of cliff-dwellings of a different type from those of Mesa Verde, and community houses of great size. The ruins, great and small, also run into hundreds. This large population disappeared long before the Spaniards came.

There are the ruins of several large settlements in the Little Colorado Valley in Arizona, which did not survive down to 1540. The Gila Valley is covered with remains of ancient village sites, and the upper tributaries are full of cliff-houses. This numerous population was all gone before the conquest. In the inland basin of northern Chihuahua, Mexico, were extensive settlements of Pueblos. Casas Grandes is one of the largest of the pre-Spanish towns in the whole Southwest. Scattered over the valley are hundreds of small-house ruins, and in the canyons of the Sierra Madre to the west are cliff villages in great numbers. These ancient people of northern Mexico were Pueblos, but not an inhabitant lived to see a white man.

So three of the populous areas of Pueblo culture, embracing hundreds of large towns and thousands of small ones, were completely depopulated centuries before the Spaniards came. The period of great decline was centuries ago. The same thing happened to many other Indian peoples. The great temple precincts of

the Maya of Central America were "one with Nineveh and Tyre" before the destructive European got a chance at them. The Toltecs were a tradition; the mound-builders an ancient mystery. The white man has many crimes to his credit, but he did not start the Pueblos or any of the above mentioned peoples on their decline, though no one will deny that he vigorously followed up whatever was at work in the way of destructive forces.

The Pueblos are the surviving remnants of a people that were distributed over a region as extensive as France or the former German Empire in Europe. It was not an area that could be continuously inhabited, however. Expanses of desert intervened between the fertile valleys, and these stretches were only sparsely settled, though it is astonishing to find over these desert wastes numerous remains of human habitations where now the prairie-dogs alone find sustenance. The large valleys were comfortably populated. There was no occasion for overcrowding. There were no cities, either in point of population or political organization. Neither was there anything comparable to our scattered individual house population. Everywhere it was town or village life. In other words, the community was the unit in the political structure—in so far as there was any. The community was a closely knit, highly organized body, a remarkable structure made up of clans, fraternities, priesthoods, with civil and religious authority sharply defined and provided for by election, never by inheritance.

But with the community, organization ceased. There was no state or nation in the sense of an organization of the whole body of inhabitants in independent governments. Each community was a miniature re-

public, but there was no permanent association of communities. Every one was a separate entity. A number of towns might in time of emergency act together under a common chief, but this never constituted a lasting alliance.

It would seem that the Rio Grande Pueblos, separated one from another by only a few miles and all having the same interests, would at least have a common council, but such is not the case. Occasionally a number of the towns have joined in sending delegations to Washington. Four times in the last fifteen years, three times at Santo Domingo and once at Santa Clara, a grand council of the Pueblo towns has met to consider their perennial land troubles, but no "league of nations" resulted or ever will of their volition. The community is self-contained and minds its own business to the extent that white communities can not account for.

The governing body in ancient times was the council, with chief and head men. At present it is the governor and principales. The governor is elected for a limited term, usually a year. The council of principales or head men is made up of those who have held the office of governor. It is therefore a government of elder statesmen. The war captain, his once glorious occupation now reduced to matters of boundaries, fences, stock trespass and police duty at religious functions, is an executive officer of the council, elective, and of equal rank with the governor. The latter has his teniente (lieutenant), elective, and alguacil (constable), appointive. There are no emoluments, and no competition to "serve the people." The office actually seeks the man, not by way of the primary or the convention, but by direct choice of heads of families in council—male suffrage only. This present arrangement was made for

the Pueblos by a white administration, but it was a modification of the ancient form preserving the fundamentals of the aboriginal system. It is essentially republican, government by representatives of the people, and has been so from time immemorial.

We can truthfully say that these surviving Pueblo communities constitute the oldest existing republics. It must be remembered, however, that they were only vest-pocket editions. No two villages nor group of villages ever came under a common authority or formed a state. There is not the faintest tradition of a "ruler" over the whole body of Pueblos, nor an organization of the people of this vast territory under a common government. There is no tradition of "rulers" of any kind. The people managed their affairs through chosen representatives. It is sometimes said that the actual rulers of the Pueblos were and are the caciques, the two religious heads of the community. This is not correct. True, they are elected for life, never hereditary, and are much revered, but they are subject to the council and are amenable to its discipline. Cases are on record of a cacique who had been publicly whipped by order of the council. The people rule.

The Pueblos exemplify to an extent not achieved by any other people in the world to my knowledge, except the Indians of Old Mexico and Central America to whom they are culturally related, the community type of social structure as distinct from the state or national type. There was no individual ownership in land. It belonged to the community, and individuals, heads of families, were granted the use of it by the council. Nominally it was reallotted each year, but actually there was little redistribution from year to year, the occupant generally keeping his patch of land as long as he did his

part in the community works. There was no common ownership in crops or other personal property. In fact, there was no community property save in the land, sanctuaries and the religious paraphernalia. Occupants of the great community houses virtually owned the apartment occupied. Tenure was for the life of not only the family but the clan, and there were no transfers of ownership. When a clan died out, the apartment was abandoned. For that reason, portions of community houses are often seen in ruins while the town is still well populated.

What is the lesson to be derived from Pueblo communism? Simply that developing naturally as it did through the ages along with the color of the skin, and all the elements of his character, it was a good way for the Pueblo, as was his religion. That a similar system would fit a people of our race which has developed a totally different character through ages of totally different experience is as absurd as to expect the leopard to change his spots or the Ethiopian his skin by simply deciding to do so.

A word as to the clan system. A clan comprised all the descendants of a traditional maternal ancestor. Children belonged to the clan of the mother. Clans bore the name of some conspicuous object in nature: as the eagle, bear, sun, water, earth, turquoise, etc. There was an intimate relationship with nature that will be referred to farther on in connection with the religion of the Pueblos. Sons married away from the clan and did nothing to perpetuate it. Daughters on marrying remained, building the new home adjacent to that of the mother. Thus, many daughters born to a clan meant increase. If a time came when sons only were born in the clan, it became extinct.

Marriage must be outside of the clan, but mating into another community was frowned upon. Especially do the dwindling villages object to the marrying of their girls outside the town unless the new bridegroom is annexed to their own population. They care nothing about him, but they want the increase for their own village. Not that there is ever any feverish boosting of population. Since there can be no real-estate booms among them, there is no competition to see which shall be counted the largest town in the region, but there is always keen solicitude for the natural perpetuation of the tribe. Bachelors are extremely rare, since only heads of families count in the body politic. Women never remain unmarried during the period of fertility. The bearing of children, the building of the home (actually constructing it with her own hands), the purveyance of food and clothing, the practise of the domestic arts, the maintenance of the cultural traditions—these are privileges and duties of the Pueblo woman. It would seem to leave the man enviably free from care, but it must be remembered that he carries the community government on his shoulders, and the still more weighty affairs of religion. He must keep the ceremonies going twelve months in the year, not becoming desperately earnest in the expression of his faith in time of stress only, as the white brethren are sometimes accused of doing, but pressing steadily forward with the regularity of the seasons, in prosperity as well as in adversity, attending faithfully to the business of keeping in proper relations with the deific powers. Primarily his program is shaped by seasonal changes. It has been remarked that much of his time is occupied in "getting ready for dances, having dances, and getting over dances," the same thing that is giving parents and

teachers of young high-school adolescents so much to worry about in these modern times.

The Pueblo Indian is a good farmer on a small scale, an industrious laborer when it doesn't too seriously conflict with the duties above mentioned. He is the indispensable guide and companion of the touring tenderfoot; the chief reliance of the artist, ethnologist and special writer. His duties in connection with historic pageants and world's fairs are considerable. Add to this his modern function of furnishing steady occupation to the Bureau of Indian Affairs, the Department of Justice, Federation of Women's Clubs, Indian Rights Association, Indian Defense League, congressional committees; his pilgrimages to the East in war bonnet and beaded vest (as foreign to him as a tuxedo on a Hottentot), and you have some conception of the kaleidoscopic life of the Pueblo man of to-day.

The religious life of the Pueblos is the key to their existence. Their arts, industries, social structure, government, flow in orderly sequence from their beliefs concerning nature and deific power. The character of their religion I have indicated in earlier paragraphs. In its essence it is almost what modern science has attained to—the conception of Nature and God as one. The Indian has arrived at it through ages of experience, of reflection, of participation in the manifestations of divine power; the scientist through systematic investigation and deduction. It doesn't matter which of the roads we have taken:

"All of them lead to the light."

As I have repeatedly said, the religion of the Pueblos, as of all their cultural relatives, rests on two basic ideas: namely, belief in the unity of life as manifested in all things, and in a dual principle in all exis-

tence, fundamentally, male and female. Their religion finds expression in almost every act of life, in industries, arts, decorations; but the supreme act of worship is seen in the drama dance. The Indian is little enough understood in any respect, but in the matter of his so-called dances there is abysmal ignorance, obstinate misunderstanding, wilful misrepresentation. Almost every Pueblo ceremony that is performed in public is a prayer of intense sustained fervor. By common consent, among civilized races, we refrain from interfering with people in their devotions. In our nation dedicated to religious freedom, and in our constitution, we guarantee every one the right of religious worship, but, strange to say, from time to time government and missionary join in harassing the Pueblo in the expression of his faith. It is just as vicious as interference with Catholic mass or Protestant sacrament. Various reasons are offered. The ceremonies are alleged to involve great waste of time from profitable industry, though it is but a small fraction of that wasted in bridge and dancing in modern society. They are said to be indecent, though our social ballroom would cause a blanket Indian to cover his face. In twenty-five years of observing Pueblo ceremonies, I have seen a few vulgar exhibitions as side episodes—nothing like so flagrant as may be seen any evening in Chicago, London, Paris, Naples or Cairo. Vulgar, vicious, barbarous, idolatrous, are what the Pueblo dances are to some—to others the perfection of estheticism, the culmination of ages of devotion. It must be remembered that the Pueblos are an ancient mature race. They are not infants nor incompetents. Coercive authority over them as to their religion is unwarranted under our government, a violation of our institutions, and repugnant to fair-minded men.

*2. Catalogue of the Towns**

TAOS (Toa-tha)

The northernmost of the Rio Grande villages is Taos. It is some miles east of the river, at the foot of the Taos Mountains, a spur of the Sangre de Cristo range. For beauty of situation it could hardly be surpassed, and of this the Taos Indians are keenly aware. Back of the town is their sacred mountain. In front is their world, stretching westward to the Jemez range beyond the Rio Grande; a complete horizon of mesas, mountains, and hills encompassing a fertile valley—to the Indians an ideal world. It is a mistake to say that the Indian has no appreciation of beautiful scenes. Walk with a native of Taos along the little mountain stream that bears the name of the village up to the "Glorieta." There is, I think, no more beautiful sacred grove in the world. Stand in that noble circle of cottonwoods and be not afraid to be silent for half an hour at a time. Talk of the grove and the flowers, birds, insects, vines, clouds, getting their names and what is thought about each one, and you will soon know that the Indian is not only a nature worshiper but a beauty worshiper.

Taos is among the most populous of the Pueblo villages, numbering upward of six hundred, and the people among the most prosperous and virile of all the Indians of the Southwest. They have an abundance of fertile agricultural land, well watered by the mountain stream that flows through the town. Crops are all but certain. Fish and game are plentiful. Wild fruits abound in the valleys. It is not to be wondered at that these are among the most independent of all Pueblo people.

* Orthography of Indian words as in Spanish, except *k* replaces hard *c* and *qu*; *w* as in English; *g* always hard; *h* as in English; *j* as German *ch*; *sh* as in English; *z* as in English.

A century ago Taos was headquarters for the trapping industry of the Southwest. Its history is as picturesque as its location. It has during the past twenty years attracted artists from far and near, some of whom have painted the place and its people with rare understanding, some with no understanding at all, but their canvases have carried the fame and beauty of this remote little Indian town to the ends of the earth.

The town is in two parts, as every self-respecting Pueblo village must be, separated by the little stream. Each part consists of a large terraced community structure, six stories high, a perfect survival of the terraced architecture of the ancient house-builders. Numerous small houses for individual families have been built in proximity to the old pyramidal structures. Each half is well furnished with kivas almost entirely subterranean, more archaic in type than any other aboriginal sanctuaries in the Rio Grande Valley.

The ancient social structure is well preserved; the old religion and ceremonials fervently adhered to, though their best-known fiesta (San Geronimo Day, September thirtieth) has become so degenerated as to be not worth seeing. Their native arts have been allowed to die out, partly because of their economic prosperity. They are of an extraordinarily fine physical type, but rendered somewhat self-conscious by much posing as artists' models.

Taos belongs to the Tanoan stock, speaking the Tiwa (Tigua) language in common with Picuris near by and Sandia and Isleta near Albuquerque. It is therefore separated from its linguistic relations to the south by one hundred fifty miles, and lying between are two linguistic provinces, the Tewa, of Tanoan stock in the valley north of Santa Fe, and the Keres of the

middle Rio Grande Valley, consisting of numerous villages speaking a language (Keresan) as different from Tiwa as French is from German.

PICURIS (Pinwel-tha)

Picuris is another Tiwa village, the nearest neighboring pueblo to Taos, from which it is probably an offshoot. It is in the mountains twenty miles south of Taos; a pathetic little place, poor in resources, retaining little of its ancient art, reduced in population to scarcely one hundred and these considerably Mexicanized.

SAN JUAN (Oke)

San Juan is the northernmost village of the Tewa (Tegua-Tehua) provinces. It is on the east side of the Rio Grande opposite the site of ancient Yuque Yunque, near the confluence of the Chama and Rio Grande. Here was founded in 1598 the first capital of the most northerly province of the New Spain, named by Oñate, its founder, San Juan, but abandoned a little more than a decade later for the founding of the new and permanent capital, La Villa Real de Santa Fe de San Francisco de Assisi. Oke must have treated the Spanish conquerors with cordial hospitality for it won from them the name of San Juan de los Caballeros. It is a town of upward of four hundred inhabitants, well-off for fertile land and irrigation water. Its social structure and religious ceremonies are fairly well preserved. It has lost most of its arts, although pottery-making is still practised, a black, undecorated, burnished ware being the favorite product.

San Juan is of Tanoan stock, speaking the Tewa language.

SANTA CLARA (Khapo)

Ka'po, with a population of nearly three hundred and fifty, is on the west bank of the Rio Grande just south of the modern village of Espanola. It is near the mouth of Santa Clara Creek, one of the few small western tributaries to carry its waters to the Rio Grande. It is fairly well off in irrigable land and possesses a valuable grant lying west of the town and extending to the top of the Jemez Mountain range, and has abundant timber and grazing land.

Ka'po suffered an unfortunate schism nearly forty years ago which time has not healed. The result is that it is divided into two nearly equal factions, each with its own organization. One of these, recognized by the United States authorities as the de facto government, is conservative, reactionary, zealous for the preservation of the ancient order. The other calls itself progressive and without knowing just how or why rather hesitatingly flouts the ancient tradition. Because of this bitter antagonism between factions, Santa Clara does not live the tranquil life that is characteristic of Pueblo communities. It retains the art of pottery-making, the black lustrous ware being its favorite product, although decorating is still practised.

Ka'po is of the Tanoan stock, Tewa language. It has the distinction of being the home of Santiago Naranjo (O ye ge pi), four times governor of the pueblo (conservative), best known of all Pueblo Indians, guide, philosopher and friend of archæologists, artists and tourists without number, but firm fundamentalist for the old, true, good way.

SAN ILDEFONSO (Po hwo ge)

San Ildefonso is situated east of the Rio Grande

near the confluence of the stream that comes down from the east which bears the name of the village. Reduced to less than one hundred inhabitants, it is one of the most interesting of all Pueblo villages. It is truly an art center. Maria Martinez (Pove-tse) is, with the possible exception of Nampeo at Hano, the most famous of Indian artists. I should be inclined to give Maria first place, for, while the two artists may be considered of equal skill, Nampeo has won her fame by the marvelously accurate revival of an ancient style. Maria has perfected old processes and actually invented new ones. She is a thoroughly creative artist. But San Ildefonso is made up of artists. Close rivals of Maria and her husband, Julian, are her sisters, Maximiliana and Desideria, Juanita Peña, Antonita Roybal, Ramona Gonzalez, Rosalie Aguilar, and Tonita Roybal. No ethnologist could study Pueblo pottery-making without one or more of the above named artists for teachers. It was because of the unusual number of fine potters here that San Ildefonso was chosen twenty years ago for an experiment in cultural revival by the School of American Research of the Archæological Institute of America in Santa Fe that is described in a later chapter ("Painting and the Decorative Arts"). The results have been entirely satisfactory. These Indians were most receptive. Through the revival of pottery-making, painting and other arts, the entire community has been restored to relative prosperity. Many now have substantial incomes and several have become justly noted. I imagine that the finest result has been in the restoration of a condition of life in which they find their supreme happiness.

This was the home of Crecencio, to whom more than to any other one person was due the renaissance of paint-

ing in water color as the medium instead of the aboriginal earthen colors. His successor, Awa Tsira, is one of the three most noted Indian painters, but a dozen more young men are steadily coming to the front. The performance of some of the ceremonial dances at San Ildefonso, especially the Eagle Dance, a famous native esthetic achievement, is flawless.

Not only have the artists of San Ildefonso been our teachers, but old men of the village have been of inestimable service to us in research. The monumental work of John P. Harrington on Tewa ethnogeography was made possible by the assistance of San Ildefonso informants. Monographs of the School of American Research on Tewa ethnobotany and ethnozoology by Harrington, Freire-Marreco, Robbins and Henderson are based on what was learned from these men. My own studies for more than twenty-five years, results of which are being set forth in this volume, have been assisted beyond measure by two remarkable Tewa men, now dead, for years my guides and companions, Weyima (Antonio Domingo Peña) and Diegito Roybal, and by several others still living, whose names for obvious reasons will not be mentioned. If we found in our own race men of such wide observation of nature, such minute knowledge of plants, animals, places, mythology and language we would call them men of profound learning even though illiterate.

The history of San Ildefonso's decline and revival is most interesting. The plaza around which the town was originally built was, previous to the Pueblo Rebellion of 1680, just south of the plaza of our time, so that the row of houses forming the south side of the plaza of the last generation in earlier times constituted the north side of the square. The houses were two and

three stories high, the town large and prosperous. As a result of evil counsel the pueblo was moved north against the advice of the caciques, who knew that new migrations of the village must be to the south. The move was finally decided by the result of a game which was won by witchcraft and the plaza changed to the north. Then began the decline of Po hwo ge. Epidemics, famines, persecutions wore the population down until the wise men and women of the community saw that they were facing extinction.

With the coming into office of the present cacique, Ignacio Aguilar, supported by the wise and forceful governor, Juan Gonzalez, the problem was seriously taken up. From then on I was in council with them. They stated that as things were going, their children and young people dying much faster than replacements came by birth, San Ildefonso would in twenty years be like dead Pojoaque. They believed that the calamity could be averted by abandoning their plaza of misfortune and moving back to the south. I heartily concurred. They began the building of the new houses to the south, forming a new plaza around the ancient kiva that was now restored. Another large kiva was built to take the place of the one in the plaza that was being abandoned. In time the greater part of the community was shifted to the new south plaza and all ceremonials transferred to the new precinct. The results were up to the most fervent expectations. They point with pride to the large number of healthy children free from epidemics, and the slowing down of tuberculosis. My hopes were based largely upon improvement of morale and sanitation, and theirs on the efficacy of a tradition. Between us we struck the remedy. Perhaps the visiting nurse deserves part of the credit.

POJOAQUE (Posunwage)

Four miles up the valley to the east, on a prominent hill south of the creek, stood the Tewa village of Pojoaque. It is now in the realm of archæology. For a quarter of a century I witnessed the dwindling of this little doomed community from a population of about twenty, when I first knew it (1897) to its final extinction in 1922. Finally the last man, Antonio Tapia, with the usual imperturbable Indian attitude, watched on the lonely hilltop the steadily dying flame of community existence. No one ever heard from him a word of lamentation or regret. During the last year of his life Antonio, a rain priest, brought to me for the Museum his set of sacred water vials and explained their use as a part of the rain altar, saying that he had used them for the last time. That last rain ceremony at Pojoaque must have been an event of deep solemnity.

NAMBE

A few miles above Pojoaque on the same stream is the dwindling village of Nambe, also of Tewa speech and now very largely Mexicanized. While the census makes it appear that Nambe is increasing it should be explained that it is increasing by amalgamation with a Mexican village; as an Indian community it is probably destined to disappear in the course of a generation or two. A very little crude pottery is made here.

TESUQUE (Tathunge)

Ten miles north of Santa Fe is the Tewa town of Tesuque. It still numbers slightly above one hundred people. It is the Indian settlement nearest to the state capital. In spite of its constant exposure to acculturation, it retains much of its ancient character. This has

been accomplished by an attitude of mild hostility toward the white visitors. The people still fashion very good pottery and make of it an economic resource of considerable importance. Several able painters have emerged in this village, finding sale for their pictures in Santa Fe. In spite of reduced numbers, the Tesuque Indians perform some of the dramatic ceremonials, noticeably the Buffalo Dance, in a style that is simply faultless (see description by Marsden Hartley in a subsequent chapter).

Tesuque has been for years one of the poorest of the Pueblo communities, largely owing to the scarcity of water for irrigating the fields. Of late, the condition has been improved by the building of a dam on Tesuque Creek above the village and by the adjustment of land titles through the Pueblo Lands Board.

From the above it will be seen that the Tewa have been having a struggle against physical decline, only two villages, O'ke and Ka'po, being noticeably on the increase. Culturally they have picked up marvelously. It remains to be seen how substantially this will influence physical revival.

COCHITI (Kotyiti)

Crossing over to the middle Rio Grande Valley where the river emerges from White Rock Canyon, we come into the upper end of the Keres province. The northernmost village, Cochiti, is on the west side of the river. It numbers nearly three hundred in population and, in addition to the forceful conservatism of all Keres people, has the advantage of remoteness from highways and white settlements to protect its native culture. The Cochiteños make excellent pottery and are sharing in the revival of the Pueblo arts. Their finest artist

wants no schools, no advice about farming, no white man's medicine. Its extreme conservatism is maintained by an attitude of firm hostility which can become acute on slight provocation such as photographing or sketching the dances, driving automobiles into the plaza when sacred performances are going on, etc. On these occasions the visitor should accept the misfortune of a smashed camera or windshield or even a smashed head with perfect equanimity in the consciousness that it was well deserved and that if he presses the matter he may get even worse. A good rule to observe in visiting Santo Domingo or any other Indian pueblo is to accept the courtesies that are offered, such as entering private houses, and let it go at that; in other words, act toward these gentle, courteous people about as you would expect polite neighbors or strangers to act toward you and your home.

Good pottery is made at Santo Domingo, of excellent characteristic design. You recognize its ollas and bowls as far as you can see them. Some weaving is done and some shell bead work. The making of turquoise and silver jewelry has been revived here and is becoming a large source of revenue. There is a vast mythology and folk-lore stored away in this village but the people are too close-mouthed to let much of it out.

SAN FELIPE (Katishtya)

This large and well-preserved Keresan town, numbering upward of five hundred inhabitants, is situated on the west bank of the Rio Grande about five miles below Santo Domingo. The people are characterized by the extreme conservatism of Santo Domingo, speak an identical tongue, do very little with any of the native arts, and are fairly well-to-do, their land being fertile

and well watered. Their ceremonies are among the finest to be seen, if one can be so fortunate as to find out when they occur. They have succeeded in keeping some of their most interesting dates quite unknown. One of the best of all surviving examples of early Franciscan architecture is to be seen in the old church at San Felipe.

SANTA ANA (Tamaya)

Leaving the Rio Grande a few miles above Bernalillo and proceeding up the Jemez Valley to the west you encounter the Keres village of Tamaya. It is set down in the midst of the sand-dunes on the north side of Jemez Creek, with but little tillable land nearer than the Rio Grande Valley, six miles away. It numbers about two hundred twenty-five people and is just holding its own. The town is practically abandoned during the cropping season except on fiesta days, all the people with the exception of a few old men for guards being in the camps and lookouts near the fields. Good pottery was made at Santa Ana until recently. They now obtain it largely from their nearest neighbors at Zia. Santa Ana takes no part in any of the recent art revivals. It is across the dunes and quicksands some miles from the highway and consequently is left quite alone, which is exactly what it wants. This village, with its neighbor above, which is next to be described, is as fine an example of human adaptation to a barren environment as could be found in searching the world over. Generation after generation of people live their lives out upon these desolate hills in all the contentment of a prairie-dog town. Not many miles away are opportunities in agriculture and industry that would seem to beckon them to a more abundant life. But Santa Ana sticks to its sand-hills and watches the world tear-

ing by on the east and south without the slightest desire to participate.

ZIA (Tsi-ya)

Ten miles above Santa Ana, on a basaltic mound on the north side of Jemez Creek, is the Keres pueblo of Zia. It has a population of about one hundred fifty and has about the smallest conceivable amount of farming land that such a community could exist on. Yet Zia sits upon her black lava knoll, taking the sand-storms of summer and the occasional blasts of winter from the Jemez Mountains with perfect equanimity and with every appearance of contentment. The language is practically identical with that of Santa Ana and the Keres villages on the banks of the Rio Grande. The people are more cordial to white visitors than are the communities above described and are having some part in the renaissance of Pueblo arts and industries. Excellent pottery is made at Zia and the ceremonies survive in good form. From Zia came Velino Shije, a painter who has become distinguished. One of the best of the old Franciscan churches is at Zia.

JEMEZ (Heminsh)

Go ten miles more up Jemez Creek almost to where it breaks out of the mountains and we enter an entirely new province, that of Jemez, one that has always been more or less unfriendly to the Keres. The language, for which Mr. Harrington has proposed the name Towa, is quite unrelated to the neighboring Keres. The nearest cognate of the Jemez was the town of Pecos, the large frontier settlement sixty miles to the east, extinct since 1838. The pathetic remnant of Pecos population, about eighteen souls, that sought and received sanctuary at Jemez in 1838, has thrived and multiplied until now

they claim that over two hundred of Jemez's population of six hundred are descended from Pecos mothers. I knew well and obtained some information from Agustin Pecos and his uncle, José Miguel, the last actual survivors of Pecos town. They were born in Pecos a few years before its abandonment. Pablo Toya, son of the last governor of Pecos but born after the exodus to Jemez, was a man of great learning, as Indian learning goes, and was one of the most valued informants that we have ever had in matters of Indian history and geography. He was of much assistance to Mr. Harrington in the preparation of his Tewa Ethnogeography.

Jemez is a well-to-do town. It has ample land and water and its people are noticeably independent. They preserve their old government and ceremonies but have lost most of their arts. They depend on Zia for their pottery. Under the guidance of wise teachers in the government day-school they have of late years resumed work in textiles with marked success.

SANDIA (Nanfiath)

Returning to the Rio Grande we come to Sandia, a few miles south of Bernalillo, fourteen miles north of Albuquerque. The village is east of the river. It contains less than a hundred people and is much Mexicanized. As a community it is moribund. It is the only surviving village of the province of Tiguex in which Coronado made his headquarters from 1540 to 1542. The entire community of Sandia fled to northeastern Arizona during the Pueblo Rebellion of 1680. They remained among the Hopi for about sixty years, returning to their Rio Grande home during the years 1742-48.

Sandia preserves no aboriginal arts and its cere-

monials are broken down. The pueblo is of Tanoan stock, speaking the Tiwa language of Taos, Picuris and Isleta.

ISLETA (Shiahwibak)

The southernmost of the towns of the Rio Grande Valley is Isleta, one of the largest of all the pueblos, numbering upward of a thousand people. It is on the west bank of the Rio Grande, fifteen miles south of Albuquerque. Its name suggests, and its traditions indicate, that it was once on an island in the Rio Grande. It is possible that the main village was once situated on the east side of the river. If this should be established as a fact, some perplexing points in the ethnohistory of the middle Rio Grande Valley would be cleared up.

The people of Isleta are of Tanoan stock, speaking the Tiwa dialect. They are quite independent economically, having excellent land and plentiful water. It is an intelligent, virile community, attached to the ancient order of things but not keeping up persistently the aboriginal arts. Some pottery is made which is not of superior quality.

LAGUNA (Kawaik)

Leaving the Rio Grande and going west about fifty miles along the Santa Fe Railway, the pueblo of Laguna is reached. It is the largest of all Pueblo settlements east of the Continental Divide, numbering between nineteen hundred and two thousand inhabitants. It is of recent origin, its composition a mixture of Keresan, Shoshonean and Zuni elements. The language of the town is Keres. The people are all exceptionally high class, owing to some extent to their having broken up the large community into smaller groups which have

formed permanent agricultural villages at Casa Blanca, Cubero, Paguate, Pajare and several other localities. They are good farmers, industrious and thrifty and well provided with land. They are also excellent potters.

ACOMA (Ako)

Last of the towns of the Rio Grande drainage to be catalogued is Acoma, the "Sky Village." It is sixty miles west of the river, fifteen miles southwest of Laguna. With its small farming community settlements, Acomita and Pueblita, fourteen to eighteen miles away, it has a population of nearly one thousand.

The famous Rock of Acoma is a sandstone mesa three hundred and fifty-seven feet in height. Near by is the fabled Mesa Encantada. For situation, Acoma is one of the most remarkable of Indian towns. No other pueblo gives one such a clear sense of living in ancestral times; no other so vividly illustrates the title of this book, *Ancient Life in the American Southwest.* Watching the people passing up and down those dizzy rock trails, the girls carrying their water-jars on their heads, the life and times of the cliff-dwellers are reconstructed before our eyes. Acoma is the culmination of the idea of contemporary ancestry. One realizes how little guess-work is really necessary on the part of the archæologist of the Southwest in restoring the picture of ancient life in all its vital aspects.

The language is pure Keres. The Acomeños are among the finest and most prolific of potters. The arts, ceremonies and manners of antiquity are here preserved in one of the finest survivals in the world. Some way should be found to make Acoma a national monument (as Spain has Toledo) for the purpose of keeping for

all time if possible one perfect example of ancient American community life.

Eighteen towns have now been described; one, Pojoaque, having recently become extinct. These constitute the Pueblo Indian population that has survived on the east side of the Continental Divide. There has been a shrinkage in the number of towns of approximately eighty per cent. since 1540. Much of this was caused by the Pueblo Rebellion of 1680. Just what the numerical decline has been is impossible to determine because of the unreliability of all population estimates prior to the coming of the Southwest into the American Union.

To make a complete catalogue of the towns, those west of the Continental Divide must of course be counted. These include Zuni in western New Mexico with a population of nearly two thousand. The Zuni language shows marked affinities with the Tanoan of Taos, but at present stands as a separate stock.

The Hopi towns in Arizona are in three groups. On the first or East Mesa are Hano (Tewa), Walpi and Sichomovi. On the Middle Mesa are Mishongnovi, Shipaulovi and Shongopovi. On the West Mesa are Oraibi, rapidly falling into decay, and its modern successor, Hotaville. There are also outlying settlements at Moencopi and Tuba City which may be counted with the West Mesa people. The population of the East Mesa may be roughly estimated at five hundred; of the Middle Mesa, six hundred; of the West Mesa, nine hundred; approximately two thousand for the combined Hopi villages. Shoshonean is the language of all, with the exception of Hano, a Tewa village transplanted from the Rio Grande Valley.

The present Zuni is what survives of the fabled Seven Cities of Cibola. The Hopi towns enumerated constitute the remnants of the ancient province of Tusayan. These are the towns that illustrate the transition between the numerous ruins of the purely archæological realm that must be investigated with pick and spade and the modern villages that can best be studied through the language, arts, industries, traditions, myths, folklore and ceremonials of the living people. Detailed description of these two provinces is reserved for a later group of chapters under the title, "The Realm of the Pick and Spade."

Chapter II

WISDOM OF THE PAST

1. Tradition, Cosmography, Mythology

At the head of this group of chapters I have used the term, "Contemporary Ancestry." The expression calls for a brief explanation. The Pueblo Indian orders his life to this day on lines laid down ages ago. Tradition governs in both individual and community life. He has only such twentieth-century beliefs, customs and habits as his white neighbors have forced upon him. In every vital respect he is a contemporary of the village Indians of half a millennium ago. In a very real sense his ancestors take part in all his important activities. Spiritually they are his contemporaries, and he seeks their guidance in his most serious affairs. More than once my Tewa guide has come asking to be off duty for a few days. Pressed for a reason, the answer would be, "I must go to talk with my father." Knowing that his father had been dead for many years, I have sought to find out what was meant, and learned that when matters of great moment were up for consideration in council it was his practise (common to the head men of the village) to retire to the sanctuary (kiva or estufa) often for days at a time to commune with the spirit of a revered ancestor to learn how the ancients would act under like circumstances.

So the wisdom of the past is the most precious factor in the life of the Pueblo Indian. Clearly, here in modified form is typical Oriental ancestor cult. It is as fine a type of ancestor veneration as has been found anywhere in the world. Watching the manifestations of this for many years among the Pueblos I have come to

wonder if the ancestor "worship," which has been made so prominent in Oriental religions, is not largely an exaggeration, for which the white man is responsible, of the idea of veneration. The fervor with which the guidance of the ancestor is invoked may easily be interpreted as prayer to a deity when it is simply an expression of profound veneration and of dependence upon the ancients for wisdom. At any rate, that is what it means in Indian religion.

The wisdom of the past, then, is the solid ground on which the Pueblo Indians rest their whole scheme of existence. There are no agnostics among them. There are no doubtful moralities—only eternal verities. Experimental science has no place. It is a philosophy of unchangeableness. It is based upon the absolute reliability of the ways of nature. This is best seen in their cosmography. There is, first of all, an unchanging universe (Tewa, the *Opa*) which includes all created things. The all-pervading life in the *Opa* is the principal object of worship. It is nature worship in its finest and most reasonable form.

Duality in all things is so obvious that it is simply a matter of course. There are sky and earth, male and female, light and darkness, heat and cold, summer and winter; nothing for man to question in all this. These are simply conditions that exist. All man has to do is to accept them and adapt himself to them. The sky (Tewa, *Makowa*) and the earth (Tewa, *Nañ*) are the chief embodiments of deific power impersonated as Makowa Sendo (*Makowa,* Sky; *Sendo,* Old Man) and Nañkwijo (*Nañ,* Earth; *Kwijo,* Old Woman); but note that the qualification "old" is a term not of disrespect, as sometimes used by our modern youth, but one of profound veneration. The relation of these two

vast sources of deific power is perfectly obvious. It is that which exists between male and female throughout nature, including man and woman. The earth, from which all new life springs; the sky, which is the source of the fructifying elements, heat and moisture; the interrelation of these two mighty sources producing new life—all this seems so simple as not to require any reasoning; and that the origin of the life of man is an analogous process is so obvious as to invite no question. Sky and earth are to each other in the relation of man and wife. These are serious beliefs, the fundamentals of their philosophy.

The Pueblos have an abundant mythology which is beginning to enrich the literature of the New World. As myth-makers they were comparable to the Norse and the Greeks. Heavenly bodies are regarded by them as deities. The sun, dressed in white buckskin and decorated with many strands of beads, his face always covered by a mask, walks across the sky from east to west over trails which run above the great waters of the sky. On setting, he passes through a lake to the underworld and after traveling all night to the east emerges through a lake and begins the same journey over again. The moon travels the same paths and is by some regarded as male, by others, female. In the Tewa version the morning star is a male divinity, the Morning Star Warrior. The evening star (Evening Star Lady) is the woman with yellowish hair.

Every village has its four sacred mountains marking the world quarters. On the top of each is a shrine. Among the Tewa, Lake Peak (Ku-se-piñ—blue stone mountain), in the Sangre de Cristo range east of the upper Rio Grande Valley, is the East World Mountain, sacred to fertility. Mating ceremonies are held

there in the spring. San Antonio Peak (Ke-piñ—bear mountain) on the Colorado-New Mexico line, is the North World Mountain, consecrated to the hunt. Pelado (Tsigu-mu-piñ—black obsidian mountain), is the West World Mountain, sacred to the spirit life. The spirit "goes west" until it reaches the underworld, the Land of Sipophe. There it abides in Wénimah, a great sanctuary like a kiva. The Indians point out a place near the village, under which they hear the spirits of the ancients singing and dancing in Weyima. Sandia Mountain (Oku-piñ—turtle mountain), on the southern horizon, is the South World Mountain, sacred to war. In the red cloud on its summit lived Oku-wa-piñ, father of the twin War Gods who were reared there. It is also the home of Wa-kwijo, Mother of the Winds. This mountain is the scene of a world of mythology. It is the Mount Olympus of the Southwest.

In folk-lore the Pueblos are among the most prolific of all peoples. As applied to them, I can not agree with Major Powell that folk-lore is a discredited mythology—a mythology once held as a philosophy, nor can I accept his dictum that "the wisdom of one age is the folly of the next." The Pueblos have a vast body of ancient folk-lore, and they are still creating folk tales. It seems to me that their folk-lore is simply the spontaneous manifestation of that marvelous play of fancy that is seen in other products of the Indian mind. It is displayed in the infinite variety of design, both life forms and geometric, used in pottery decoration. Here their power of invention seems limitless. I doubt if they have the slightest belief in their folk tales, or that they ever have had. If they had attained to the use of letters they would have created a great literature.

A cycle of their folk tales will here be presented.

These were collected by my students in the excavating camp in Chaco Canyon, New Mexico, during the summer of 1929, under the guidance of Mr. John P. Harrington. I use the English version as recorded by Miss Anna Risser. These are all of Zuni origin.

2. *Folk Tales*

A CREATION MYTH

Long ago people did not live upon the earth where we now live. They lived in a world far below us. They had no sun or moon or stars. It was very dark and wet. The gods were not pleased with this world or the beings which they had created so they said, "We will destroy this world and all the people and make a new world." And so they did. The new world was above the first one. But it was still very wet and very dark and the people were not happy. The gods destroyed this world and tried a third time, but the third world was still very bad. The gods looked at the unhappy people living in darkness and mud. They had webbed hands and feet and long tails. Their homes were not real homes at all but pits dug in the mud. The Sun Father said, "We must make a fourth world. We will make it dry and give the people light." So the fourth world was made above the one where the people were living. The Sun Father sent the lightning to make an opening between the two worlds. The earth shook and trembled. At last when all was still again the Morning Star and his twin brother, the Evening Star, went into the underworld to find a way to bring the people out. They found some people paddling about in the mud

near the opening. The Stars shone so brightly that the mud people could not look at them. The Morning Star said, "Where is your chief? We want to see him." The people said, "He lives over there," and pointed to a place a little farther on. The brothers looked about but they could see no house. The people led them to the muddy pit where the chief lived. Morning Star shook his head sadly. He said, "The Sun Father has sent us to tell you to come to the new world that he has made for you. There it is light and warm."

This did not please the people at first. They covered their eyes with their hands to keep out the light. But soon they began to like the light of the Stars. After they had thought of it for a while one of the canyon of the underworld said, "I have been thinking of a way to get into this new world. I have a seed of the fir tree here. I will plant it and we can climb up and out on the tree." He planted the tree and sang as he did so. For four days he sang and in that time the tree became full grown. But when they tried to climb the tree they found that it was not strong enough. Another canyon then said, "I have the seed of the pine tree. I think it will be strong enough." But when it grew it too was not strong enough. A third canyon planted the aspen, but they could not use it. The next one tried the cottonwood tree, but as it grew it spread out too much. The Evening Star planted a tree that is something like the piñon tree but smaller, so it would not do either. Then the Morning Star said, "You have all tried. Now I will see what I can do." He called the macaw people and told them to search till they

found a plant that was suitable for this purpose.

They wandered about for a long time. Finally they found what they thought would do. It was not a large plant as might have been expected but they carried it to the Morning Star and he said, "You may plant it. I shall put something there for the people, too." So the macaw cacique planted the seed of the large cane. The people camped near by to watch it grow. In four years it was large enough for the people to pass through. They called the opening in the reed "the road of life." When all was ready the flint, the gift of the cacique of the Above, passed through first. The earth shook and trembled just as it had done when the lightning had made the opening between the two worlds. When the people came up through the reed they were covered with a green mossy substance. This they washed off in a spring near by as soon as they came out. The cacique cut the webs that were between their fingers and toes and cut off their tails. They put grasses about their waists for clothing.

The earth was very wet and the people had to keep moving about from place to place. For four days it rained and the earth quivered and shook. Then the sun came out. The stars appeared, too, and gathered the people into groups. No matter how weak the eyes of the people had been they became healed as they looked at the sun. The peoples of Laguna and Acoma looked at the sun sidewise so they still squint, but those of Zuni and the Navaho looked straight at the sun and they have strong eyes. When the sun first shone upon the people they spoke the same language but before

the day was over they spoke many different kinds of language and still do to this day.

THE COMING OF 'AHAYUTAH (The Elder War God)

For many years the people wandered about looking for a good place to make their home. Pekhwinneh had been a good leader. But as they came to the meadow below which the katcinas lived he called the Zuni cacique to him and said, "I am going to leave you. From now on you will lead the people."

So they went on following the new leader till they came to the foot of the mesa. The captain and his people stopped here to rest. But the captain sent his son and a younger daughter on to see what was on the mesa and beyond. When the youth and maiden reached the top of the mesa they found a thick growth of juniper and cedar. The brother saw that his sister was very tired so he said, "You wait here. I am going to the next mesa and see what it is like. I shall be back." When the brother reached the other mesa he liked it much better than the first one. He went back to get his sister, but she did not wish to go to the second mesa. "I like it here and I shall stay. The people who stop here shall be my people and those who go to the second mesa shall be your people." This plan pleased the boy, and he drew a dividing-line between the mesas.

As the captain led the people to the first mesa some of the people stopped there, but others went on with the captain toward the second mesa. As they came near the dividing-line the boy made it appear to the people as water and the earth about

red. The captain, however, led his people on. The stream did not seem deep so he urged them to pass through it. When the people who were carrying children went through the water the children were changed into fishes, frogs and waterdogs. They bit and scratched so terribly that their mothers dropped them in fear. The captain stopped the people when he saw what was happening. "I think if each one will carry water in his mouth we shall not lose the other children." They all filled their mouths with water and started across. The children changed into animal forms as soon as their mothers stepped into the water. They scratched and bit, but their mothers held them tightly just the same. What was their surprise to have their children become normal again as soon as the mothers stepped out upon the bank! There was nothing but mesa—nothing more to turn them back so they marched on, the parents of the lost children grieving sorely. After a time they came to a cave about which they saw many footsteps of children. This puzzled the people very much. They followed the footsteps and came to the edge of a lake. In the middle of the lake protruded what appeared to be a ladder from a large round kiva. The captain and his people stopped and camped on the edge of the lake and waited while Morning Star and his brother went on to investigate.

The two brothers passed down the dry path and into the kiva—for it really was one. There they found many people and soon saw that they were the lost children grown into young men and women. They were living here with the brother and sister of the first and second mesa. They said

to the brothers, "Tell our parents that we are happy here. They must not grieve longer for us. When they are unhappy and weep we also are unhappy. Tell them that some day they, too, will come here to live." The brother, who was now a katcina, sent a message telling the people to go on till they found Zuni which was only a little farther on. He said that on their way they would probably meet a bad white katcina and his people. He said it would be well if the people made prayer-sticks when they were sad or in trouble. As the katcinas saw the smoke they would come to them and they would have a dance.

The people, hearing these things, continued on their march happily. The captain appointed officers as his helpers. These people made prayer plumes like those of the Morning Star. As soon as these were made it began to rain and continued to do so for four days. At first it rained gently but soon the water came down in sheets till the land was covered with water. Before this time the land was a perfect plain, but as the rain came down harder and harder rivers, arroyos and cañons were formed leaving high mesas and mountains. The water ran into a deep hole at the foot of a hill and churned wildly about as if it contained amole. Three figures appeared led by 'Ahayutah, the first war captain. The Morning Star had driven them out to help the people. From this time on 'Ahayutah remained with the people and advised them in all warfare.

THE CORN RACE

Long ago when people first came to live in this world everybody did the same kind of work. When

the twin brothers wanted to give the Indians the gift of corn they talked it over. Morning Star said, "It would be better to give the corn to one group—not to all." So they tried to think of a plan. Morning Star said, "I know what we can do. We can have a corn race and see which will be the corn raisers. Let us call all the people."

When all the people had gathered he chose the fastest runner from each tribe—one Zuni, one Acoma and one Navaho. He took an ear of corn out of his belt and broke it into three parts, the butt being the largest part, the middle piece a little smaller, and the point the smallest of all. He placed them on the ground with the point nearest the runners, the middle part next and the largest piece at the back.

At last all was ready. The signal was given and they were off. They ran as lightly as the deer and as swiftly. The people watched breathlessly. The racers drew apart with the Navaho boy in the lead. As he rushed past the goal he snatched up the first piece of corn which was the point. The Acoma racer came in next and he took the middle piece. The Zuni boy, coming in last, got the butt end of the ear.

The elder brother shook his head and said, "The Navaho won the race. He should have got the largest piece of corn. Instead he has the smallest." But Evening Star replied, "It is well. The Navaho is the swiftest runner. He will always be moving about from place to place. He will not be able to take care of much corn. The people of Zuni and Acoma will live in houses. They will stay in one place so they can raise much corn."

And so it has been just as the Evening Star said. The Navaho are always moving. They have their summer homes and their winter homes. But the Zuni and Acoma are still living in their pueblos and make their living mostly by farming.

THE RETURN OF THE CORN MAIDENS

In a pueblo near the present village of Zuni there once lived a group of women known as the corn maidens. It was their duty to keep the people of their village supplied with corn. There was the blue corn person, the red, the yellow, the speckled, the black, and the white. These corn maidens did not like the company of men and in order to avoid them decided to move away toward the south.

So the maidens started away, but when they came to the big river they were at a loss how to get across. They made preparations to summon the white duck, their friend, so that he might help them to cross the river. First they got a big, big shell and put corn pollen in it mixed with water. Then they all climbed into the shell.

Then came 'Awah, the white duck. "Good evening," said he. "Why have you called me?" "Good evening," said the leader of the corn maidens. "We are fleeing from our pueblo and have come to the river and can not get across. Will you help us?" The white duck said, "Yes, I will help you. Get on my back and I will get you across safely." At this the corn maidens got on his back and crossed the river in one night.

The following day when the people of the pueblo went to prepare the morning meal there was no

corn. When they went to the house of the corn people in search of some they were not to be found. "Where can they be?" said the people. "What shall we do without corn? It must be that we have not been good people and so our corn has disappeared." Not only the ripe corn was gone but the growing corn had been killed by frost during the night although it was midsummer.

Then Pitsitseh, seeing the distress of the people, called them together to ask if any of them knew where the corn women had gone. He sent messengers to their house, but they had not returned. The messengers saw tracks leading to the river but no other traces were to be found.

As the days passed the people suffered more and more from hunger. They were finally living upon the weeds of the fields.

The cacique sent the chicken hawk out in search of the corn maidens, but he returned with no news of their whereabouts. Next the hummingbird was dispatched, but his quest was also useless. The blackbird was sent next, but he fared no better than the other two. Finally the little water bird was sent out, and he reported having seen a big white duck swimming about the water but nothing else. The fact was that when the corn maidens saw so many birds flying about they were afraid of being seen and hid under the wings of the big white duck. For three days the search continued, but all in vain.

Pitsitseh called the bird which the people call "The Happy One" because he is always singing and said to him, "You are always flying about. Surely you have seen the corn maidens." But he answered,

"I have not seen them, but I will fly off and see if I can get news of them. I will return in the morning."

Early the next morning the bird returned to the cacique's house and told him to do just as he was told. The cacique promised.

Following the orders given him he called six birds, the white eagle, the little yellow bird, the blackbird, the blue bird, the red bird and the speckled one. From each bird he begged six feathers—four tail feathers and two wing feathers which the birds gladly gave. Next he made some stout cord out of the amole plant. After this he cut three willow and three cottonwood sticks. He painted each stick a different color to match the feathers, yellow, blue, red, white, vari-colored and black. To each stick he fastened the six feathers with the amole cord. He took them to the cacique's house and called the other caciques to him. He said to them, "I am going away, maybe for a day, maybe for many days. While I am gone you must enter the kiva from the right and leave from the left. You must keep silent and fast till I return."

Saying this, he walked away from the kiva about two miles. Here he stopped and made a mound of earth upon which he placed the yellow prayer-stick for the yellow corn maiden. He sprinkled yellow corn-meal about the prayer-stick and prayed to the spirits to send the yellow corn maiden back to them. Then he walked toward the kiva some feet and did the same as before, planting the blue prayer-stick, and prayed for the return of the blue corn maiden. He went on and in the same manner he placed the red, speckled, black and

white stick at regular intervals back toward the kiva.

Soon, in answer to his prayers, he saw Khoyemcih'tatchuh and Pautiwah coming from Wenimah. They said, "We have heard your prayers and have come to help you." In a very short time the corn maidens came to the spot. Then Khoyemcih'tatchuh, Pautiwah, Pehwinneh, Pitsitseh and two other caciques led the way back to the kiva. They all entered the kiva but the corn maidens and Khoyemcih'tatchuh. The latter walked around the kiva, sprinkling sacred yellow corn-meal as he did so. The yellow corn maiden followed him and on coming to the entrance of the kiva passed in. In the same way he led each of the corn maidens around the kiva and they passed inside. Then Khoyemcih'tatchuh passed around the kiva four times more and returned to Wénimah.

Within the kiva the caciques talked to the corn maidens and persuaded them to go back to their homes in the pueblo. This they did and soon there was corn enough for all, and the people were very happy.

THE GIANT KILLER

'Ahayutah watched over his people from a high mesa. He saw them about their work and noted all their joys and sorrows. As time went on he noticed that people who went for wood on a certain trail never returned. "That is not well," he said. "Maybe some one in that cañon is killing them."

In the morning he went to his younger brother and said, "Our people are in trouble. Let us go and search and find out what is going on." They found the trail and saw many footprints leading

out but none coming back. The trail led to a high mesa. As they came to the top of the mesa the trail became very narrow with a great precipice to one side. As they rounded a corner they came upon a great giant who sat with his leg stretched over the trail. There was a horn growing out from the center of his forehead. When 'Ahayutah saw this he knew that he was looking upon a giant who killed people for food.

The giant greeted them in a very friendly fashion. "Good morning. Where are you going?" "Oh, we are just walking around," answered 'Ahayutah. "If you will move out of the trail we will go on," he added, pretending not to know that the giant meant to knock them over the cliff. "I can not move," said the giant. "My leg is sore. But you can get by. I will not hurt you." "No," said 'Ahayutah, "the trail is too narrow. I am afraid I will fall off the cliff. You must move." But the giant would not move. He continued to urge them to come on. So finally 'Ahayutah said to his brother, "You go first." So the younger brother, 'Ahayutah'ansuweh, passed by the giant. As he did so the giant gave a great kick and the younger brother fell over the precipice. But, as the giant kicked, 'Ahayutah seized him and the two of them also fell over the cliff.

The giant's son, who was waiting at the foot of the cliff for the victim to be pushed over ran forward. He struck out with his huge club but it was his own father that he killed. The two brothers then jumped upon him and killed him, thus ridding their people of two terrible monsters. Now the people can travel over the trail unharmed.

THE UNCORKING OF THE RAIN JARS

All went well with the people after 'Ahayutah had killed the giant and his son. The people could go far and near to gather food or hunt game without being molested. They were very happy. But gradually other trouble came. They planted crops but the rains did not come. Rains came to distant regions but not to the Zuni peoples.

'Ahayutah saw the distress of the people. He could not understand why rain should not fall on the Zuni crops so he set out to find the reason. He met the gopher on the way and asked him if he could explain why rain did not fall. The gopher replied, "I do not know, but I think the giant who lives on the other side of the cañon is to blame. I do not live near his house so I have heard nothing." "But you could build a house near his and help us to find out what is wrong, couldn't you?" asked 'Ahayutah. This the gopher was willing to do. So that day he started out to find the giant's home. He built the entrance to his new home not far from the giant's home. He made a long tunnel. That night when the giant was asleep he came up into his house. He looked around. "Ah! Now I see why we have no rain," he said to himself. For all about the room were sitting rows of jars filled with rain clouds. "I must go back and tell 'Ahayutah," he said. "But first I will see if I can find where the giant keeps his heart. Then it will be easy for 'Ahayutah to kill him." He searched till he saw the beating of the heart under the giant's right arm between his ribs. Then he went quickly to find 'Ahayutah to tell him all that had happened.

"To-morrow night while the giant sleeps you

can go through my house into the tunnel to the giant's house," said the gopher. "But your house is too small. I can not get into your house," replied the war god. "It is plenty large enough," said his little friend.

'Ahayutah went to his brother's house and said, "I want you to go with me to the giant's house to-night. He has all the rain clouds in jars sealed with pine gum. You must help me to kill him. If we both shoot at the same time one of us will surely kill him. Then we can set the rain clouds free."

The gopher met them at the door of his house. They passed in and were greatly surprised to find how large it was. Before they started through the tunnel the gopher said, "When you have shot the giant run back into my house as quickly as you can. Do not wait to see if you have killed him. If he should catch you he would surely kill you. As soon as you have entered my house again I will fill up the tunnel so the giant can not get through."

When they entered the giant's house they found him lying there fast asleep. They took careful aim and shot at the same time. The giant jumped to his feet with a roar of anger and pain. The two brothers turned and fled down the hall as fast as they could go. They stayed in the gopher's house near the opening watching and waiting to see what would happen. By and by they ventured to peep out and saw the giant lying near by. "Let us be careful," said 'Ahayutah. "Maybe he is not really dead. Let us throw something at him. If he is alive he will get up."

They threw a stone and hit the giant, but he did

not move. When they drew near, however, they found that he was still alive. 'Ahayutah struck him in the stomach with his long flint knife while his younger brother built a great fire. When the fire was burning brightly they cut out the giant's heart and placed it upon the fire so that he could not come to life again. When this was finished they went to the giant's house and opened the jars, one by one, until all the clouds were free. Soon the clouds began to gather in the sky and a gentle rain fell.

The people shouted for joy. "Now our crops will grow and we shall have food in plenty. Our hearts are light and happy once more."

THE FREEING OF THE DEER

Once there was a man named Khutchutih who lived south and west of the home of the katcinas. Here he had a huge corral where he kept all the deer. The Indians could not understand why they could find no deer on their long hunts. They caught small game, but that was not sufficient. The people were suffering from hunger.

One night as 'Ahayutah lay upon the mesa top heat lightning flashed and he saw the deer corral far in the distance. "That is strange," said he to himself. "To-morrow I must see what it means." So saying, he put a stick in the ground pointing toward the corral so he would have no trouble in finding it the next day.

The next morning he prepared sacred meal and started out. He went to his brother's house first and told him where he was going. "If I do not return in four days you must come and find out

what has happened," he said. He called his friend, the eagle person, and asked him to carry him beyond the river. He thought he must be quite close when he saw two girls washing buckskin. When they saw him coming they stopped their work and put everything away. "Good morning," said 'Ahayutah, "What were you doing?" "Good morning," replied the girls. "We were not doing anything." "Oh, yes, you were," said he. "Why did you stop? You were washing buckskin." At this the girls looked frightened and would not speak again about their task. "Where do you live?" asked 'Ahayutah. "Over there," replied the girls and pointed to a house a little farther on.

As he drew near Khutchutih came out and spoke very ungraciously. "Good morning, what are you seeking?" "Oh, I am not looking for anything. I am just walking around," replied 'Ahayutah. Khutchutih did not believe him but he replied, "You must be sure not to go this way," and pointed in the direction of the corral. "There is a very wicked man who lives that way. He has killed many of my people and will probably kill you if he sees you."

'Ahayutah pretended to believe this and started off in a different direction. But as soon as he was out of sight he circled around until he was going in the direction Khutchutih had warned him against. He soon came to the great herd of deer strongly fenced in. He did not know what to do. He thought he would go home and think up a plan. As he started on his way he met an owl who asked him what he was looking for. 'Ahayutah replied as he had to Khutchutih. "I am not looking for any-

thing. I am just walking around." "I think you are looking for something. Did you see the deer?" asked the owl. 'Ahayutah said to himself, "Maybe I can get the owl to help me." So he said aloud, "Yes, I saw the deer in the corral. I came out to look for them. My people are in need of food. It is not right for Khutchutih to keep all the deer. Will you help me to free them?" "Indeed, I will," replied the owl and set to work at once to make some medicine. He made four small loaves of bread like little cakes. He also had some black wool which he gave to 'Ahayutah. He said he had got it from medicine houses at night. He told 'Ahayutah to call six animals, the wolf, the bear, the badger, the mountain lion, the eagle person and the coyote and tell them to meet at the corral on the following night.

'Ahayutah returned to Khutchutih's house the next evening. This time he told him that he was looking for deer. Khutchutih invited him to come in and stay for the night. But this 'Ahayutah would not do. "I never sleep in houses," he replied, and although he was urged to come in he would not do so. He lay down outside by the door. A short time before midnight he got up and looked around and went back to bed. "It is still early," he said. At midnight he looked about again. This time he built a fire and placed the cakes upon it. He threw a little of the black wool in each direction so that all the people would sleep soundly. "Only Father God knows how this is to be accomplished," he said to himself as he went to the corral.

As he drew near the corral he saw the great horned owl standing guard over the deer. He

threw some of the black wool in his direction and at once the owl fell asleep. Then he went up to the deer and talked to them. They said they were very sad because they were not allowed to run free over the hills and mesas. Just then the six animals came up. "You have sent for us. What do you want us to do?" 'Ahayutah said, "I want you to try to tear down this fence so that the deer can be free." The fence was very high and strong, but the animals succeeded in tearing it down after hard work. The deer joyously ran out of the gap. One ran to the north. The mountain lion was very hungry so he ran after it and killed it. Another went to the west. This time the bear followed and killed the deer. A third deer ran to the south and was brought down by the badger. Still a fourth deer ran, this time to the east. The wolf sprang after it and killed it. The other deer hesitated. Then one small deer left the herd and started away. The coyote ran after it. They both disappeared in the forest, no one knew where. But soon the coyote reappeared with his tongue lolling out and his sides heaving. The deer had got away. The other animals laughed heartily at him because of his chagrin. 'Ahayutah said, "You have failed to make your kill. Therefore, you shall never make your own kills. You must eat what other animals leave." The deer that escaped is very wild. It has its home upon the high mountains and rugged mesas. He is Halikah, the mule deer.

About this time Khutchutih and the people of his pueblo awoke. They cried out angrily when they saw deer over the hills and cañons. "Who let the deer out of the corral?" screamed Khutchutih.

They ran toward 'Ahayutah and his six friends. 'Ahayutah took some of the black wool and threw it at them as they advanced. Immediately they were changed into black crows. These were the first crows in the world. They flew away cawing hoarsely.

'Ahayutah returned to his people and found the boys and all the people celebrating the coming of the deer.

THE RETURN OF 'AHAYUTAH AND HIS BROTHER TO WÉNIMAH

'Ahayutah was very glad to see the people happy once more. He said, "You do not need me now, my brother and I must return to Wénimah. It is not well for us to talk with people. In four days we shall go."

Then the cacique called the people together and said, "We shall have a great feast before the war god and his brother leave. For three days we shall prepare for the feast—making prayer plumes and sacred meal." And so they did. On the fourth night everybody gathered at the estufa. As many as could do so crowded into the estufa and the others stood without. Pékhwinneh talked to the people thus, "It is well that we make prayer plumes often. Maybe we shall meet some one like the wicked White Katcina again. Who knows? It is well that we know more about our own katcinas and give them offerings of sacred meal."

They sang and danced all night. As the Morning Star came up in the sky Pékhwinneh took two large baskets. "Put your prayer plumes in these two baskets," he said. They did this and the baskets were full. 'Ahayutah took one and his brother the

other. They went first to 'Ahayutah's home on the mesa. He destroyed his house and put the prayer plumes there. He said, "The people must bring their prayer plumes here." Then they went to the second mesa, and his brother did likewise. Here they bade good-by to the people and went on to Wénimah where they are to this day.

3. Religious Beliefs and Ceremonies

While the Pueblos are much given to the play of fancy that is seen in folk tales and some phases of decorative art, they are for the most part of intensely serious disposition. There can be no understanding of their lives apart from their religious beliefs and practises. The same may be said of their social structure, and of their industries. Planting, cultivating, harvesting, hunting, even war, are dominated by religious rites. The social order of the people is established and maintained by way of tribal ceremonials. Through age-old ritual and dramatic celebration, practised with unvarying regularity, participated in by all, keeping time to the days, seasons and ages, moving in rhythmic procession with life and all natural forces, the people are kept in a state of orderly composure and like-mindedness.

The religious life of the Pueblo Indian is expressed mainly through the community dances, and in these ceremonies are the very foundations of the ancient wisdom. The term "dance," as here used, has little of the meaning of the same word applied to the sex dances of modern society, or to the esthetic and interpretive dances, with us a popular form of entertainment or of physical and esthetic satisfaction. The native American has long and reverently contemplated nature, has reflected on his relations to the life and other phenomena

about him, and has arrived at profound convictions which have been only slightly disturbed by contact with the European. For the successful ordering of his life, he has questioned his own spirit and, singularly free from the "lord of creation" conceit, has sought and gained wisdom from birds, beasts, flowers, trees, skies, waters, clouds and hills. All this is voiced in his prayers and dramatized in his dances—rhythm of movement and of color summoned to express in utmost brilliancy the vibrant faith of a people in the deific order of the world and in the way the ancients devised for keeping man in harmony with his universe. All his arts, therefore, are rooted in ancestral beliefs and in archaic esthetic forms.

It is incorrect to say that the Pueblo Indian does not dance for pleasure or for recreation. On the contrary, he experiences the most exalted satisfaction, physical, esthetic, spiritual, in the dance, and at the close of hours of intense and fervent concentration upon the ceremony shows no evidence of fatigue but exhibits every sign of the contrary state. But the motive back of the Indian dance is never amusement nor entertainment. Always it celebrates exalted relationships—dependence upon deific power and gratitude for the gifts of life and well-being; stages in the progress of the individual through life, such as birth, maturity and mating; unity with all living things in forest, air and stream; humanity in its manifold activities of war and peace, of industries and arts; and mythical relations with an unseen world, rich in legend and creative lore, brilliant in color, elusive in mysticism.

Most constant of all in the Southwest are rain and growth ceremonials, solemn invocations designed to call from the sky the elements that are essential to the fruc-

tifying of earth for the bringing forth of what is necessary to sustain the life of man. The ceremonies that follow on through the seasons, having to do with growth, maturation, harvesting and consecration of food products, are all on the same high spiritual plane, directed toward assuring sustenance for human life.

The mating ceremonies of the Pueblos are among the most beautiful ever devised by the mind of man. The idea of mating between the youth of the community is dramatized with all the solemnity of ritual and beauty of color of which these reverential people are capable. It is by mating that new life comes into being; so preparation for mating is made a matter of profoundly significant ritual. But social rituals do not stop here. They dramatize every stage of life. As a result of mating, the tribe is perpetuated, so birth ceremonials are among their most impressive rites. Only as children are conducted along the path that has been found good and finally inducted into the community life through rigid family and clan discipline and ceremony, is the social group made stronger.

All seasonal ceremonies are better understood when certain fundamental facts of Pueblo cosmography are known. One of these is the conception of the House of the Sun.

THE HOUSE OF THE SUN

The cycle of summer and winter ceremonies is governed by the movements of the sun. The life of the Indian was ordered to a great extent in conformity to the changing seasons. He observed that the sun, both in the east and west, reached a point in the south beyond which it never traveled, and from which it commenced its return to the north. In due time the return of the sun dispelled the cold of the winter and brought

warmth and life back to the earth. The beginning of the new year was the first day of spring, when the new life from Mother Earth commenced to manifest itself. Then was the time for the planting of seed for the food crops, always accompanied by dramatization of planting, germination, rain and growth. Likewise, it was mating time, and ceremonies of fructification took place in the spring.

As the sun proceeded in his northward progress, the plants grew and approached maturity, accompanied by fertilization and maturation ceremonies. As the corn and other vegetables became available for food, the Corn Dances occupied the Pueblos at frequent intervals. Later on, the fervent rain prayers of the summer gave way to the no less fervent ceremonies of gratitude for the abundance which meant life to the tribe. After the harvest, which was always closed by appropriate celebrations, the thoughts of the Indians turned to the next great enterprise necessary to assure their subsistence: namely, the hunt. One of the outstanding features of the religion of the Pueblos is the intimate relationship of the people to all living things. The life of man is in no way different or apart from the life of all other creatures. Even rocks, clouds, sky, and things which are by us considered inanimate, are thought by the Indian to be possessed of life, exactly the same as the life of the human being. This relationship is constantly recognized, and the preservation of harmony with all things about him is one of the essentials of successful life with the Indian. The animal ceremonies of the fall and winter, like the rain and cloud ceremonies of the summer, are directed by this idea. Therefore, a hunting dance of any kind has far greater significance than is implied by the name it bears. In this connection,

it is noticed that the sun reaches its farthest point north on both eastern and western horizons at a certain time, and then begins its return journey to the south, leaving the north to the cold and dreariness of winter, a time which nevertheless is rich in meaning. In the course of his movements, the sun has proceeded from south to north and now returns from the north back to the south within certain fixed limits of time and space. This is the region in which the sun lives, the House of the Sun.

THE CORN DANCES

The Corn Dances that are to be seen in the Rio Grande Valley during the summer are for the most part fragments of major ceremonies relating to the germination, maturation and harvesting of the corn. Every Corn Dance is an invocation to the deities that have given the corn, provided for its growth and brought it to maturity. There is involved also its harvesting and its protection from predatory enemies. The Green Corn Dance of Santo Domingo is the best preserved of all southwestern ceremonies and will therefore be described in some detail. Others of equal beauty are the Yellow Corn Ceremony, the Dance of the Corn Maidens and the Harvest Dance. From a purely artistic standpoint, these commend themselves to those who appreciate a beautiful performance as almost incomparable. Those who are familiar with the esthetic dances of primitive peoples throughout the world are unanimous in the opinion that the Corn Dances of the Pueblos are unrivaled in beauty and symbolic meaning.

THE GREEN CORN DANCE

On the fourth day of August annually, at the Keres pueblo of Santo Domingo in the Rio Grande Valley,

occurs the Green Corn Ceremony. A thorough understanding of this will make clear almost every one of the summer ceremonies of the Pueblos. It is the most nearly perfect survival of the ancient religious ceremonies of the Pueblos. Because of the extreme conservatism of the Santo Domingo people, this ceremony has been very little corrupted by the introduction of Christian elements. It is an elaborate prayer for the maturation and preservation of the corn. It is a dramatization of the spiritual life.

The ceremony begins with certain Christian rites held at the church. These are absolutely foreign to the main dance. They are held as a concession to the authority of the Catholic Church to which most Pueblo Indians nominally adhere. After the procession from the church to a booth at one end of the town plaza, at the head of which the image of the patron saint of the pueblo is carried, there is no further reference to anything that has been introduced by white men.

The first part of the ceremony is historical in character. Emerging from the summer kiva, you see a procession of ghostly figures. These are the Koshare. It must be understood that these characters are not clowns and are not intended to amuse. They represent the Ancients, the spirits or shades of the ancestors of the people, those who still exercise a protecting influence through their mediatory office with the gods. Here is a survival of ancestor veneration as deeply rooted in the Pueblo mind as in the minds of Oriental peoples.

It is to be noticed that the Koshare first encircle, in their march, both halves of the pueblo, thus in symbolic movement throwing the protecting influence of the Ancients around the whole people. Meeting in the sacred precinct with another procession of Koshare that

has emerged from the winter kiva there is a dramatic conference over something which is evidently the cause of great excitement. Immediately runners are sent out to the east, west, north and south. These are seen to disappear in the kivas or into adjacent houses, and the excited conference goes on.

Presently there comes running from the east the messenger who was sent in that direction. He is surrounded at once by the excited throng and his message is received with dramatic gesture and animated speeches. Then comes the runner from the west and the same dramatic performance is enacted. These are the runners sent to the frontiers who bring word of the enemy, Apache, Comanche or Navaho, gathered for the raids upon the crops. Then come the runners from the north and south, bringing liquids of which all partake, these being for the purification of the warriors about to depart for the frontier.

Then follow further dramatic performances which are readily interpreted as preparation for battle and the procession disappears in the depth of the kiva. This closes the historical portion of the drama and discloses the motif of the ceremony.

Then follows the dance proper which is an invocation to the deities that have given the corn, that have brought it to maturity, and that are now implored to protect it from the enemy.

No attempt can be made in this brief account to analyze the beautiful ceremony in full. A description of the costumes and movements would call for a discussion of the entire subject of the religion, social organization and symbolism of the Pueblos. However, a few details may be put down.

The participants in the dance are of three classes.

The Koshare have already been mentioned. The dancers in costume, numbering usually about two hundred, are male and female in equal numbers. They are in two divisions, the summer and winter people dancing alternately. Each division is accompanied by a large chorus made up of a representative group of the men of the community, among whom are noted many of the elders of the tribe. Not less than one hundred men usually are in the chorus.

The two groups of performers assemble in their respective kivas for costuming and for the secret rites that are never seen in public. The summer people are usually the first to emerge from their kiva, the one at the east end of the plaza. To know when the dancers are to come out, it is only necessary to watch the great wand or standard in the center of the roof of each kiva. The taking down of this standard is the signal that the dance is to begin. The procession emerges from the door in the roof of the kiva, a man and a woman alternately coming down the ladder from the roof. As corrupted in recent years, the line proceeds to the front of the church where the dancing begins. The dancers encompass the north half of the town and enter the plaza from the west to the slow even chant of the prelude or first song. This changes to the more accentuated second song as the center of the plaza is reached. Usually four chants with the accompanying dance movements are given before this division retires from the plaza to make way for the winter people who will be seen coming out of their kiva at the west end and south side of the plaza and falling into line after encompassing the south half of the town.

At the head of each procession is carried the great wand or standard, at first by the rain priest, usually an

old man, who soon turns it over to a young assistant who bears it during the remainder of the ceremony. Each division, summer and winter people, has its own wand, the two differing somewhat in symbolic ornament. This wand is a smooth pole about ten feet in length. At the extreme top is a bunch of brilliant macaw feathers, around the base of which are bunches of the feathers of the parrot and woodpecker tied with strands of colored beads and ocean shells. An embroidered banner, quite like the rain sash worn by the men in the dance, extends down the pole, secured by thongs and trimmed at intervals with eagle feathers which float out from the edge of the banner. A fox skin dangles from near the top of the wand.

This ceremonial wand is the most sacred emblem of the ceremony. Its potency in rain paraphernalia lies in the objects above mentioned with which it is decorated, all life in nature being there symbolically represented. The wand-bearer stands to one side of the line of dancers, waving the sacred emblem over them during the entire ceremony. Theoretically, all the people in the course of the day pass under it for purification. Four times each division dances back and forth in the plaza to the ever-swelling chant which increases in fervor as the day advances. Toward the end of the afternoon the two halves combine in one grand finale.

Throughout the ceremony the Koshare, disembodied spirits of the ancients, dance among the performers, by whom they are not supposed to be seen, with incredible grace of movement and rhythmic gesture. It will be discovered that the entire performance is under their direction. Their bodies are bare, painted in gray or red-brown earthen color representing the seasonal division to which they belong; spots or stripes and

symbolic designs in black add to their mimicry, the painting of the face especially bringing out the ghostly aspect. The hair, in which tufts of dried corn husks are tied, is matted with clay of grayish color. A small black loin-cloth is worn, and suspended on the right hip is the buckskin medicine pouch. A girdle consisting of a roll of dry rabbit skin is worn over the shoulder or around the waist, and a ring of the same material around each ankle.

This completes the costume of the Koshare except for a few minor details. The sprays of evergreen worn and carried in the hand as seen of late years are out of place. It is an indication of loss on the part of the dancers themselves of the meaning of some elements of the costume.

During the dance there is nothing but the utmost seriousness manifested by the Koshare. There is no real clowning at any time. The horse-play indulged in outside the dance, such as chasing the children and making advances to the women, produces much laughter and gave rise to the misnomer, the Delight-Makers.

The women are dressed in the simple ceremonial costume; the short black skirt of archaic weave, red embroidered belt, all the jewelry they possess, beads, bracelets, etc., the feet bare, the long black hair flowing free. On the head is the tablita, shaped from a thin board and bearing painted symbols of sun, moon and clouds. The costume of the men is more picturesque and significant.

There is the broad sash or kilt, embroidered in symbolic designs; the white rain belt with streamers hanging down the right leg; the fox skin suspended from the belt behind; tufts of parrot and woodpecker feathers tied into the hair on the top of the head; the long hair

flowing loosely down the back; a girdle of shells (conus) from the Great Sea worn over the left shoulder and crossing to the right hip; painted arm-bands of rawhide; on the knee a turtle shell rattle (of late years replaced by sleigh-bells); and on each ankle a mask made of skunk skin.

The women carry sprays of evergreen, symbol of life, in each hand; the men carry in the right hand the rain rattle made from the native gourd. Much evergreen is and should be worn by both men and women.

Such is a purely mechanical description of the great Corn Ceremony of the Keres which is seen in its entirety and at its best at Santo Domingo, but which in some form or other is still performed in every Rio Grande pueblo.

THE SUN DANCE

This ceremony, formerly engaged in by practically the entire village, has come to be a dance in which the whole population is represented by two men and two women personating the two halves of the village. It is a spring dance, celebrating the return of the growing season with a dramatization of the planting, cultivating and growth of the corn as a result of the return of the sun. This ceremony had entirely disappeared from the pueblos and was recently revived by the Indians of Santa Clara. It is almost identical with the ceremony known as the Acequia Dance, in which the principal episode of the celebration is the turning on of the water in the ditches with the advent of the planting season.

THE BASKET DANCE

This is one of the most beautiful and significant of all the seasonal dances of the Pueblos. It takes its name from the use of the food basket in the ceremony,

the basket symbolizing that which it contains: namely, the food which preserves the life of the tribe. It contains the seed that is planted in the ground, and which must be fructified in due time. It contains the fruit or grain which the earth yields in response to the efforts of the people through the planting and growing season. It bears the meal that is produced when the harvest of corn is ground, and finally, the loaves of bread ready for the sustenance of the tribe. The invocations to fertility that occur in the Basket Dance embrace not only the food plant life, but the human race, which must multiply and transmit the gift of life from generation to generation. A complete series of the pictures presented in this ceremony would constitute an epitome of woman's life, her consecration to child-bearing and the sustaining of the life of the tribe.

THE EAGLE DANCE

This is a fragment of a ceremony that was formerly common to all Pueblo towns. It was performed in the early spring and likely to be repeated from time to time during the summer. The Eagle or Thunder Bird was supposed to have direct intercourse with sky powers and was much venerated. It is not uncommon to this day to see specimens of either the Golden or American Eagle kept in captivity at the Indian villages and treated with every mark of veneration. The dance is a dramatization of the supposed relationship between the Eagle and man and deific powers. Two young men are costumed as Eagles, and, in the course of the dance, imitate almost every movement of these great birds. You see them in the act of soaring, hovering over the fields, perching on high places, resting on the ground, and going through various mating gestures.

Tewa Indian.

Bust by Eugenie Shonnard.

Santiago Naranjo (Tewa) Governor of Santa Clara Pueblo

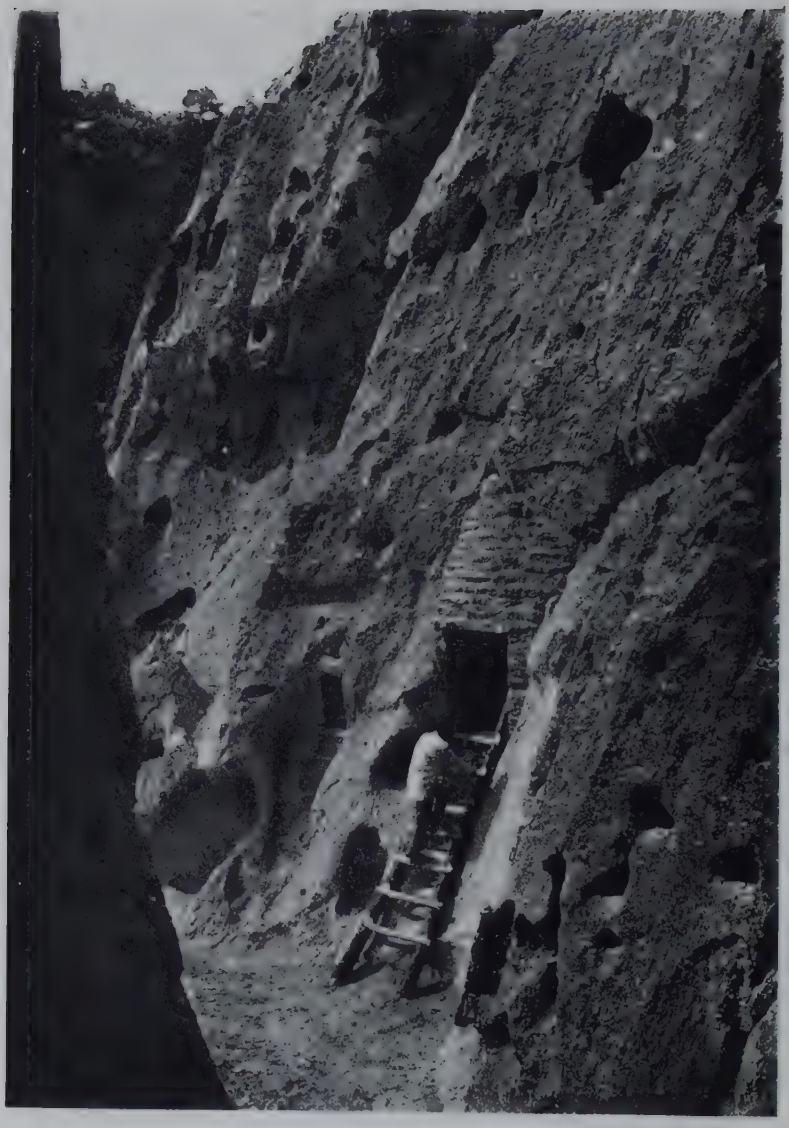
From painting by Julius Rolshoven.

Diegito (Tewa) Rain Priest of San Ildefonso Pueblo

From painting by Robert Henri.

Tsianina: Indian Singer. Cherokee-Creek.

Oskenonton: Indian Singer. Mohawk.



A Cave Sanctuary—Pajarito Plateau.

The Keres Pueblo of Laguna.

Pueblo of Taos: North House.

The Pueblo of Jemez.

San Ildefonso's Sacred Spring of the West.

Pueblo of Zuni.

The Green Corn Ceremony at Santo Domingo.

From painting by Awa Tsira.

Buffalo Dance at San Ildefonso.

The Hopi Snake Dance.

From painting by Fred Kabotie, a further example of whose work is shown on the jacket of this book.

Ancient Pottery of Pajarito Plateau.

Ancient Pottery of Casas Grandes Valley, Chihuahua, Mexico.

Excavated Community House. Tyuonyi, El Rito de los Frijoles.

Excavated Section of Chetro Ketl, Chaco Canyon.

Excavated Talus Village. Canyon of El Rito de los Frijoles.

The Kiva in the Sacred Cave. El Rito de los Frijoles.

Excavation of the Great Community House. Puyé, Pajarito Plateau.

THE RACE OF THE RAIN CLOUDS

This ceremony, which in a number of the pueblos has lost its primitive meaning and degenerated into foot racing and horse racing, was originally one of the finest of all the dramatic performances of the Pueblo Indians. It is still uncorrupted in Santa Clara and San Ildefonso. The racers impersonate the clouds of the summer and of the winter in their flight back and forth from the mountaintops to the east and west of the Rio Grande Valley. It is a dramatization of the conflict between the seasons, the red clouds of the summer contesting with the gray clouds of the winter for the supremacy which marks the decline of the one season and the advent of the next.

THE BUFFALO DANCE

This is the most important of the winter ceremonies of the Pueblos, and is still performed in almost every one of the villages. It is a dramatization of the supposed relation between the people and the larger animal life about them, especially the animals which furnished the winter food for the people. It takes the name "Buffalo Dance," not because that is the only food animal celebrated in the ceremony, but on account of its having been the principal source of animal food supply. The dancers are masked as buffalo, elk, antelope, in some cases mountain sheep, these being the principal game animals of the region surrounding the ancient Pueblo lands. The procession is led by a man costumed as a hunter. The dancers are usually in two lines, and between the two is seen a woman called the Buffalo Mother. She is the symbolic mother of the larger animal life of the region. A buffalo hunt to the great plains was a regularly organized ceremony. No individual could hunt independently, and severe penalties were in-

flicted for any violation of the rules of the community hunt. Animals were never killed needlessly, and practically no part of the animals killed in the hunt was wasted. The Buffalo Dance is a gorgeous ceremonial of relationship between man and animal life. The artistry of this remarkable performance will be referred to in a subsequent chapter on Indian art.

THE BOW AND ARROW DANCE

This is one of the favorite hunting dances of the Pueblos and survives in nearly all of the villages. It was a ceremony in which the whole population participated, at least symbolically, and was a dramatization of the sympathetic relationship which man always tried to sustain with the animals of the forest. The ceremony is rich in mimicry and symbolism. The movements of hunters and of the animals hunted are all represented. Some of the formations of the dances are extremely beautiful, particularly those in which the dancers arrange themselves in the form of the great bow and arrow. Various forms of this ceremony are to be seen. In some cases it is known as the Arrow Dance.

Dances of War and Peace are still performed with great seriousness by the Pueblos. A few examples of these may be briefly described.

THE COMANCHE DANCE

The Pueblos were long in hostile contact with the Comanches, the dreaded "Warriors of the East." In the dance as now performed, the idea of frightfulness in connection with the Comanches has been intensified by the enormous head-dress as well as by the action of the performance. In the typical war dance performed in preparation for battle, the body was painted black.

Nothing in Indian costuming is more significant than this painting of the body. When the Indian painted himself black from head to foot, it meant war, combat to the death, battle without quarter or mercy. It was the supreme symbol of anger and deadly intent. Nearly all the Pueblos to this day perform the Comanche Dance.

WAR DANCE OF THE WOMEN

The War Dance of the Women is one that survives in only two or three pueblos. It was carried on by the women and children of the pueblo every night while the men of the tribe were away on the war-path. It began at sunset and continued until daybreak. Being performed on a circular platform and going forward with a continuous circular movement, it came to be called the Wheel Dance, and by this name was known for many years to those who witnessed it. Even the Indians themselves adopted the name. Its true significance was disclosed to me only a few years ago by one of the most reliable old men of San Ildefonso.

THE TANOAN PEACE DANCE

Many so called "war dances" are in reality "peace dances," performed in a religious spirit to celebrate the close of hostilities. The one known as the Tanoan Peace Ceremony is a scene taken from an ancient peace drama that was formerly celebrated in all the Pueblo villages. It was a custom in ancient times among many of the Indian tribes to settle an issue of war between the people by single combat between the leaders of the opposing forces. When the two sides were drawn up for battle, the chief of one party would step forward and challenge the chief of the other side to fight out the quarrel between the people. The result of this single combat often

settled a long-standing feud. The custom was practised down to a time within the memory of people still living in the Southwest. It was customary after a war was finished to celebrate the coming of peace by elaborate dramatization of the episodes of the war. The ceremony represents the chiefs of the opposing forces in mimic combat, a description of the battle that brought peace to the tribe. Back of the combatants is the group of musicians, who chant the songs of war and peace.

The ceremony of Braiding the Peace Belt survives in only one or two pueblos, except as a tradition. It was performed throughout seasons of peace in connection with visits from one community to another. These visits were most likely to occur in the fall, embassies of peace proceeding from one village to another bearing gifts of the most substantial kind, and performing ceremonies designed to express the desire for the continuation of peace among the people. The ceremony of Braiding the Peace Belt symbolized the binding of the people in strong bonds of friendship.

THE SNOWBIRD DANCE

This is one of the most beautiful of the late fall ceremonies, and is preserved among only a few of the Pueblo villages. The name of the ceremony has little to do with its motive, and was probably attached to it because of the habit among some of the Pueblos of wearing cleverly constructed representatives of little birds in the hair during the ceremony. It is in reality a birth ritual, through which newly born babies are introduced to the life about them. Only a fragment of the formerly lengthy performance is now to be seen. The dancers are arranged in two lines; the mother of the child carries the baby down the center, and presents it

to the priest, who directs a prayer to all living things in behalf of the new life that has come into the tribe. Similar ceremonies were formerly practised among the plains Indians. On witnessing this one can not doubt its relationship to the Omaha ritual translated by Alice Fletcher, the prayer in the Introduction of the Child to the Cosmos being as follows:

Ho! Ye Sun, Moon, Stars, all ye that move in the heavens,
I bid you hear me!
Into your midst has come a new life.
Consent ye, I implore!
Make its path smooth, that it may reach the brow of the first hill!

Ho! Ye Winds, Clouds, Rain, Mist, all ye that move in the air,
I bid you hear me!
Into your midst has come a new life.
Consent ye, I implore!
Make its path smooth, that it may reach the brow of the second hill!

Ho! Ye Hills, Valleys, Rivers, Lakes, Trees, Grasses, all ye of the earth,
I bid you hear me!
Into your midst has come a new life.
Consent ye, I implore!
Make its path smooth, that it may reach the brow of the third hill!

Ho! Ye Birds, great and small, that fly in the air,
Ho! Ye Animals, great and small, that dwell in the forest,
Ho! Ye Insects that creep among the grasses and burrow in the ground,
I bid you hear me!

Into your midst has come a new life.
Consent ye, I implore!
Make its path smooth, that it may reach the brow of the fourth hill!

Ho! All ye of the heavens, all ye of the air, all ye of the earth,
I bid you all to hear me!
Into your midst has come a new life.
Consent ye, consent ye all, I implore!
Make its path smooth—then shall it travel beyond the four hills!

With all his superstitions and lack of any scientific basis for the ordering of his life, there is in the Indian a vein of common sense that in many respects attains to the level of great wisdom. It is seen in his attitude toward nature and in his wise social relations. With jealous precaution he guarded the sources of human life. Infidelity to the marriage relation was one of the gravest misdemeanors, for it was an offense against society. It was punished with desperate severity. Monogamy was the rule and mating was for life.

The bringing of new life into the world in man and in all nature was a sacrament and family life was consecration to a definite social aim. Whatever the forces are that urge toward human betterment the Indian came into harmony with them, and the result was a physical type that is unmatched among the races of men. Venereal diseases and their consequences in deformities and imbecility among children and in locomotor ataxia among adults were unknown. Child-bearing was a natural incident and the percentage of maternal mortality was zero. Comparing these conditions with the state of civilized society, one grows a bit dubious about science and civilization.

Chapter III

INDIAN ESTHETICS

"Great art is born out of great understanding of life."

—Marsden Hartley.

In writing on the Pueblo Indians one finds it all but impossible to disintegrate their culture into distinct elements such as religion, drama, art, etc. In reading these chapters, that remarkable fact of cultural integration must be kept in mind.

The basic art of all groups of the native American race, so far as I know, is the drama. Their finest achievements in architecture, sculpture, painting, music, are emanations of the drama, and the drama is the expression of their religion. In the preceding chapter was set forth the background of tribal religion and racial mental type, in the light of which the arts of the Pueblo Indian may be studied with appreciation and understanding.

1. Drama-Dances

Some years ago, at my request, Mr. Marsden Hartley, during a sojourn in the Southwest, prepared a series of articles on " Red Man Ceremonials." They were published in *Art and Archæology,* (Vol. IX, No. 1, Vol. XIII, No. 3). Nothing truer or finer has ever been said or can be on the pure artistry of the Pueblo ceremonials. Therefore, for the description of the drama-dances, I have asked and cordially received permission from the editor of *Art and Archæology* to reproduce the following section from the first of these articles.

"It is significant that all races, and primitive peoples especially, exhibit the wish somehow to inscribe their

racial autograph before they depart. It is our red man who permits us to witness the signing of his autograph with the beautiful gesture of his body in the form of the symbolic dance which he and his forefathers have practised through the centuries, making the name America something to be remembered among the great names of the world and of time. It is the red man who has written down our earliest known history, and it is of his symbolic and esthetic endeavors that we should be most reasonably proud. He is the one man who has shown us the significance of the poetic aspects of our original land. Without him we should still be unrepresented in the cultural development of the world. The wide discrepancies between our earliest history and our present make it an imperative issue for everyone loving the name America to cherish him while he remains among us as the only esthetic representative of our great country up to the present hour. He has indicated for all time the symbolic splendor of our plains, canyons, mountains, lakes, mesas and ravines, our forests and our native skies, with their animal inhabitants, the buffalo, the deer, the eagle, and the various other living presences in their midst. He has learned throughout the centuries the nature of our soil and has symbolized for his own religious and esthetic satisfaction all the various forms that have become benefactors to him.

"Americans of this time and of time to come shall know little or nothing of their spacious land until they have sought some degree of intimacy with our first artistic relative. The red man is the one truly indigenous religionist and esthete of America. He knows every form of animal and vegetable life adhering to our earth, and has made for himself a series of striking pageantries in the form of stirring dances to celebrate them, and his relation to them. Throughout the various dances of the Pueblos of the Rio Grande, those of San Felipe, Santo Domingo, San Ildefonso, Taos, Tesuque, and all the other tribes of the West and the Southwest, the same unified sense of beauty prevails, and in some of the

dances to a most remarkable degree. For instance, in a large pueblo like Santo Domingo, you have the dance composed of nearly three hundred people, two hundred of whom form the dance contingent, the other third a chorus, probably the largest singing chorus in the entire red-man population of America. In a small pueblo like Tesuque, the theme is beautifully represented by from three to a dozen individuals, all of them excellent performers in various ways. The same quality and the same character, the same sense of beauty, prevail in all of them.

"It is the little pueblo of Tesuque which has just finished its series of Christmas dances—a four-day festival celebrating with all but impeccable mastery the various identities which have meant so much to them both physically and spiritually—that I would here cite as an example. It is well known that once gesture is organized, it requires but a handful of people to represent multitude; and this lonely handful of red men in the pueblo of Tesuque numbering at most but seventy-five or eighty individuals, lessened, as is the case with all of the pueblos of the country, to a tragical degree by the recent invasions of the influenza epidemic, showed the interested observer, in groups of five or a dozen dancers and soloists including drummers, through the incomparable pageantry of the buffalo, the eagle, the snow-bird, and other varying types of small dances, the mastery of the red man in the art of gesture, the art of symbolized pantomimic expression. It is the buffalo, the eagle, and the deer dances that show you their essential greatness as artists. You find a species of rhythm so perfected in its relation to racial interpretation, as hardly to admit of witnessing ever again the copied varieties of dancing such as we whites of the present hour are familiar with. It is nothing short of captivating artistry of first excellence, and we are familiar with nothing that equals it outside of the negro syncopation which we now know so well, and from which we have borrowed all we have of native expression.

"If we had the red-man sense of time in our system, we would be better able to express ourselves. We are notoriously unorganized in esthetic conception, and what we appreciate most is merely the athletic phases of bodily expression, which is of course attractive enough, but is not in itself a formal mode of expression. The red man would teach us to be ourselves in a still greater degree, as his forefathers have taught him to be himself down the centuries, despite every obstacle. It is now as the last obstacle in the way of his racial expression that we as his host and guardian are pleasing ourselves to figure. It is as inhospitable host we are quietly urging denunciation of his pagan ceremonials. It is an inhospitable host that we are, and it is amazing enough, our wanting to suppress him. You will travel over many continents to find a more beautifully synthesized artistry than our red man offers. In times of peace we go about the world seeking out every species of life foreign to ourselves for our own esthetic or intellectual diversion, and yet we neglect on our very door-step the perhaps most remarkable realization of beauty that can be found anywhere. It is of a perfect piece with the great artistry of all time. We have to go for what we know of these types of expression to books and to fragments of stone, to monuments and to the preserved bits of pottery we now may see under glass mostly, while here is the living remnant of a culture so fine in its appreciation of the beauty of things, under our own home eye, so near that we can not even see it.

"A glimpse of the buffalo dance alone will furnish proof sufficient to you of the sense of symbolic significances in the red man that is unsurpassed. The red man is a genius in his gift of masquerade alone. He is a genius in detail and in ensemble, and the producer of to-day might learn far more from him than he can be aware of except by visiting his unique performances. The red man's notion of the theatric does not depend upon artificial appliances. He relies entirely upon the sun with its so clear light of the west and southwest to

do his profiling and silhouetting for him, and he knows the sun will cooperate with every one of his intentions. He allows for the sense of mass and of detail with proper proportion, allows also for the interval of escape in mood, crediting the value of the pause with the ability to do its prescribed work for the eye and ear perfectly, and when he is finished he retires from the scene carefully to the beating of the drums, leaving the emotion to round itself out gradually until he disappears, and silence completes the picture for the eye and the brain. His staging is of the simplest, therefore, the most natural. Since he is sure of his rhythms, in every other dancer as well as himself, he is certain of his ensemble, and is likewise sure there will be no dead spots either in the scenario or in the presentation. His production is not a show for the amusement of the onlooker; it is a pageant for the edification of his own soul. Each man is therefore concerned with the staging of the idea, because it is his own spiritual drama in a state of enaction, and each is in his own way manager of the scene, and of the duos, trios and ensembles, or whatever form the dances may require. It is therefore of a piece with his conception of nature, and the struggle for realism is not necessary, since he is at all times the natural actor, the natural expresser of the indications and suggestions derived from the great theme of nature which occupies his mind, and body, and soul. His acting is invented by himself for purposes of his own, and it is nature that gives him the sign and symbol for the expression of life as a synthesis. He is a genius in plastic expression, and every movement of his is sure to register in the unity of the theme, because he himself is a powerful unit of the group in which he may be performing. He is esthetically a responsible factor, since it concerns him as part of the great idea. He is leading soloist and auxiliary in one. He is the significant instrument in the orchestration of the theme at hand, and knows his body will respond to every requirement of phrasing. You will find the infants, of two and three years of age

even, responding in terms of play to the exacting rhythms of the dance, just as with Orientals it was the children often who wove the loveliest patterns in their rugs.

"In the instance of the buffalo dance of the Tesuque Indians, contrary to what might be expected or would popularly be conceived, there is not riotry of color, but the costumes are toned rather in the somber hues of the animal in question, and after the tone of the dark flanks of the mountains crested and avalanched with snows, looking more like buffaloes buried knee-deep in white drifts than anything else one may think of. They bring you the sense of the power of the buffalo personality, the formidable beast that once stampeded the prairies around them, solemnized with austere gesturing, enveloping him with stateliness and the silence of the winter that surrounds themselves. Three men, two of them impersonating the buffalo, the third with bow and arrow in hand, doubtless the hunter, and two women representing the mother buffalo, furnish the ensemble. Aside from an occasional note of red in girdles and minor trappings, with a softening touch of green in the pine branches in their hands, the adjustment of hue is essentially one of black and white, one of the most difficult harmonies in esthetic scales the painter encounters in the making of a picture, the most difficult of all probably, by reason of its limited range and the economic severity of color. It calls for nothing short of the finest perception of nuance, and it is the red man of America who knows with an almost flawless eye the natural harmonies of the life that surrounds him. He has for so long decorated his body with the hues of the earth that he has grown to be a part of them. He is a living embodiment in color of the various tonal characteristics of the landscape around him. He knows the harmonic value of a bark or hide, or a bit of broken earth, and of the natural unpolluted coloring to be drawn out of various types of vegetable matter at his disposal. Even if he resorts to our present-day store ribbons and cheap

trinkets for accessories, he does it with a view to creating the appearance of racial ensemble. He is one of the essential decorators of the world. A look at the totem poles and the prayer robes of the Indians of Alaska will convince you of that.

"In the buffalo dance, then, you perceive the red man's fine knowledge of color relations, of the harmonizing of buffalo skins, of white buckskins painted with most expressively simple designs symbolizing the various earth identities, and the accompanying ornamentation of strings of shells and other odd bits having a black or a gray and white luster. You get an adjusted relation of white which traverses the complete scale of color possibility in monochrome. The two men representing the buffalo, with buffalo heads covering their heads and faces from view down to their breasts, their bodies to the waist painted black, no sign of pencilings visible to relieve the austerity of intention, legs painted black and white, with cuffs of skunks fur round the ankles to represent the death-mask symbol, relieving the edges of the buckskin moccasins—in all this you have the notes that are necessary for the color balance of the idea of solemnity presented to the eye. You find even the white starlike splashes here and there on backs and breasts and arms coinciding splendidly with the flecks of eagle-down that quiver in the wind down their black bodies, and the long black hair of the accompanying hunter, as flecks of foam would rise from waterfalls of dark mountain streams; and the feathers that float from the tips of the buffalo horns seem like young eaglets ready to leave the eyry, to swim for the first time the far fields of air above and below them, to traverse with skill the sunlit spaces their eyes have opened to with a fierce amazement. Even the clouds of frozen breath darting from the lips of the dancers served as an essential phase of the symbolic decoration, and the girdles of tiny conchlike shells rattling round their agile thighs made a music you were glad to hear. The sunshine fell from them, too, in scales of light, danced around the spaces enveloping

them along with the flecks of eagle-down that floated away from their dark warm bodies, and their jet-blue hair. It is the incomparable understanding of their own inventive rhythms that inspire and impress you as spectator. It is the swift comprehension of change in rhythm given them by the drummers, the speedy response of their so living pulsating bodies, the irresistible rapport with the varying themes, that thrills and invites you to remain close to the picture. They know, as perfect artists would know, the essential value of the materials at their disposal, and the eye for harmonic relationships is as keen as the impeccable gift for rhythm which is theirs. The note of skill was again accentuated when at the close of the season's ensemble with a repetition of the beautiful eagle dance, there appeared two grotesqueries in the form of charming devil spirits in the hues of animals also, again in startling arrangements of black and white, with the single hint of color in the red lips of the masks that covered their heads completely from view, and from which long tails of white horsehair fell down their gray white backs,—completing the feeling once again of stout animal spirits roaming through dark forests in search of sad faces, or, it may even be, of evil-doers.

"All these dances form the single spectacle surviving from a great race that no American can afford actually to miss, and certainly not to ignore. It is easy to conceive with what furore of amazement these spectacles would be received if they were brought for a single performance to our metropolitan stage. But they will never be seen away from the soil on which they have been conceived and perpetuated. It is with a simple cordiality the red man permits you to witness the esthetic survivals of his great race. It is the artist and the poet for whom they seem to be almost especially created, since these are probably nearest to understanding them from the point of view of finely organized expression; for it is by the artist and the poet of the first order that they have been invented and perfected. We as Ameri-

cans of to-day would profit by assisting as much as possible in the continuance of these beautiful spectacles, rather than to assist in the calm dismissal and destruction of them. It is the gesture of a slowly but surely passing race which they themselves can not live without; just as we, if we but knew the ineffable beauty of them, would want at least to avail ourselves of a feast for the eye which no other country in existence can offer us, and which any other nation in the world would be only too proud to cherish and to foster."

2. Painting and the Decorative Arts

Left to themselves to choose their subjects Indian painters almost always portray their dramatic ceremonies. The examples here presented illustrate this close relationship to drama and ritual. They constitute a distinct revelation in racial esthetics. A special ability is here disclosed which only awaits encouragement and opportunity. If it is as prevalent as we now believe it to be, the Indian race may attain to a place equal to that of the Orientals, whose painting in many respects, such as its flat decorative character, absence of backgrounds and foregrounds, freedom from our system of perspective, unerring color sense and strangely impersonal character, it strongly resembles. Carried over into ceramic decoration, it becomes highly symbolic. In fact, Indian painting, beginning with the adornment of the human body with simple earthen colors, proceeding through the embellishment of the costume and of almost all articles of use, reaching its highest development in ceramics, is essentially a symbolic, decorative art. Rarely does it become pictorial. A noteworthy exception to this is seen in the Mimbres pottery, and here it maintains the archaic racial character—lack of representative style and freedom from exacting anatomical

requirements—that has been the delight of the ancients through all time in all lands, and in which the ultra-modernists of to-day might find a true basis for a philosophy of art in which they seem as yet insecure.

From time to time, Pueblo Indians have acquired some skill but no eminence in painting European-fashion under the instrument of white teachers. The artists whose work is here illustrated are painting in their own style, developing their own technique, exercising their own color sense, entirely free from white influence. They are Indian youths who were given special encouragement and protected from enthusiastic friends who would send them off to art schools. (Well-meaning individuals have come to the Southwest from time to time to teach these masters of ceramics, the Pueblos, how to make pottery!)

The first to display conspicuous ability in true Indian painting was Crecencio Martinez (Te-e), a Tewa of San Ildefonso, who had worked for the School of Research for years in its excavations. He showed skill in the decoration of pottery and one day announced that he could paint the costumed figures of the ceremonial dances. He was at once commissioned to do so and in the course of some months completed his task most creditably, just before his death. His work attracted the favorable attention of eminent artists. No one knew how he came by his remarkable ability. He had been taught nothing about drawing or color and, with no preparatory practise at all, did his work with accuracy and precision. Those who followed him, inspired by his example and by the appreciation accorded his work, have shown the same singular talent.

Awa Tsira is a Tewa from the village of San Ildefonso. He had only a primary education, obtained in

the Indian day-school at his home. Fred Kabotie, a Hopi boy, finished the eighth grade in the United States Indian School at Santa Fe and graduated from the city high school. Velino Shije is a Zia boy who finished the fifth grade in the Government Indian School at Santa Fe. These young Indians, untaught in drawing and the use of color, were simply protected from learning art by our methods and enabled to go on in their own way in which no one can teach them. Their methods constitute a most interesting study in racial psychology. There is never any experimenting with their colors or patterns. The picture appears to be mentally completed. Then with absolute precision it is executed, with never an erasure nor the slightest modification.

That this peculiar skill is possessed by many individuals among the Pueblos is certain from the observations already made. The purpose now is to broaden the experiment by extending the same opportunity and encouragement to other individuals and tribes until it is made a fair demonstration of the ability of the race and the possibility of reviving a power that has been submerged, dormant through the generations of their submission to the stronger, indifferent, unsympathetic European, but surviving to an unexpected degree. It raises an intensely interesting problem. That the Indian race was rich in artists of a high order in ancient times, is certain on the evidence of their surviving works in architecture, sculpture, painting and ceramics in the Southwest, Mexico, Central America and Peru, the four most conspicuous culture areas of the American continent. Bernal Diaz relates that the artists of the Aztecs were sent to the seacoast by Montezuma to paint and bring back to him pictures of the horses, ships and white invaders under Cortez.

With a view to testing the cultural vitality of the Pueblo Indians an experiment has been in progress in the Southwest for twenty years. The experiment was based on the hope that the long suppression of the special abilities of the Indians had not necessarily resulted in their eradication. The question was, what could be done toward the revival of hereditary talents, rendered dormant through several generations of inaction. In the absence of literary records, a wealth of ancient art products furnished the evidence of the race's achievements, and the occasional emergence of an individual of outstanding ability suggested the survival of the racial power.

The Pueblos of New Mexico and Arizona afforded the best available field for the operation of such a program. They are the surviving remnants of the once considerable population that was in ancient times distributed over the valleys of the Southwest, including northern Mexico. The arts that formerly flourished were, on archæological evidence, pottery-making, basketry, weaving and embroidery, lapidary work (turquoise and shell), dramatic ceremonies and costuming, music and painting. Twenty years ago, in fifty per cent. of the villages, the making of pottery had ceased and in only four or five was a high standard maintained. Basketry had disappeared from all but two or three and could be said to flourish in only one. Weaving, with decorative embroidery, was kept up mostly for ceremonial purposes in three or four villages. Work in turquoise was practised in but two pueblos and other villages still made a few shell ornaments. Painting, except as pottery decoration, had entirely disappeared. Dramatic ceremonies with musical accompaniment survived in all the villages but were steadily declining under

the disapproval of government, church and philanthropic organizations. Especially noticeable was the deterioration in costuming, which was losing its symbolic character, its beauty and its meaning to the dancers themselves.

The main dependence for livelihood in all the Pueblos was farming. The arts of the people added little to their economic resources and were losing their importance as cultural assets. There were those who were apprehensive that, with the loss of their hereditary culture, the same degradation awaited the Pueblos that many other peoples have suffered under like conditions. The program of restoration was advanced unobtrusively toward the public as well as toward the Indians themselves, the likelihood of hostility being obvious. It consisted in: first, steady insistence upon the integrity and essential dignity of the dramatic dances; resisting the fallacy that they are obscene and barbaric; upholding at all times but not in a controversial manner the rights of the Indians to their own religion and customs; determining the meaning of the ceremonies and explaining them through lectures and printed accounts; impressing the Indians themselves with the importance of keeping up their ceremonies and preserving their symbolic meaning. Special inducements to perfect their costuming were offered.

In pottery the making of fine ware was encouraged by establishing a market for it and securing fair prices. Opportunities for museum exhibition have been afforded and the best work produced has been kept before the public. Design has been intensively studied and the artists enabled to see the masterwork of their ancestors and create new forms of their own. Excellent work has been rewarded by approval and substantial

remuneration. In painting, the recovery of a lost art has been accomplished. It ranks as the most noteworthy achievement of the Santa Fe program. Extensively practised in ancient times, if we may depend upon tradition, it had entirely disappeared. In its revival the young Indians above mentioned had the leading part.

Some substantial results may be claimed for the Santa Fe experiment. It may be said that every art practised by the Pueblos in ancient times has been brought back with the exception of basketry. The dramatic ceremonies have become understood; opposition to them is abating. A priceless heritage is being regained. Archaic ceremonies are being revived. Many never seen heretofore by white people are now performed in public. They are receiving world-wide notice, becoming faultless in costuming and execution, winning for the Indians a place among the artistic races of the world and of time. Indian music is increasing in popularity. Pottery-making is regaining its ancient place. Several potters are gaining nation-wide fame and economic independence. In a single village a man and wife, one modeling and the other decorating, make more money from their art than the whole community makes by farming. The demand for fine pottery is steadily increasing. It has become a substantial resource in a number of communities. The making of turquoise ornaments and inlaying of shell with turquoise and jet have in at least one pueblo regained the ancient place, and the demand is making this one of the worth-while arts. Two pueblos have taken up embroidery in the style of the old ceremonial belt and sash work. It is being applied to the making of useful articles, such as shopping bags, table covers and women's garments, and promises

good returns. It has attracted the attention of the government and is receiving official encouragement. Indian painting and painters are becoming known and appreciated throughout the world of art. Kabotie, Velino and Awa Tsira are attaining to professional stature and the rewards of successful artists. Good work is now coming from ten villages and the demand for exhibitions of Indian paintings is constant. These paintings have made known many ceremonies heretofore unknown to us, have helped to reveal their meaning and to revive their performance.

Too much must not be claimed for these results. High hopes for the effect upon the Indians are warranted, if, along with native ability, independence and self-esteem are being restored. It must be remembered that these are the activities that give joy to life. Their decline in any race means spiritual impoverishment, intellectual and physical degeneration. Their restoration should bring a new outlook. If it should result in a considerable development of indigenous art, religion, social and political structure, it would not be unfortunate for America. We should be perfectly willing to see New-World culture colored by native American influence.

One may be permitted to repeat what has recently been asserted by Dr. Hartley Burr Alexander, an eminent authority in both anthropology and philosophy: namely, that "this revival of the arts of the Pueblos has already resulted in marked improvement in living conditions, dress, bearing, and general appearance of the people" and that "this program is beyond doubt the most promising effort that has been made for the betterment of the Indians."

3. Basket-Making and the Textile Arts

The beautifully illustrated work on "Aboriginal American Basketry," by Otis T. Mason (*Report of U. S. National Museum,* 1902), is the classic on this subject. In his introductory chapter Professor Mason makes the following statements:

"Wherever civilization has come in contact with lower races, whether in Britain, Africa, Polynesia, or America, it has found the woman enjoying the most friendly acquaintance with textile plants and skilful in weaving their roots, stems and leaves into basketry, matting and other similar products without machinery. Basketry was well-nigh universal throughout the Western Hemisphere before the discovery, while at least one-half of the area was devoid of pottery.

"Ancient cemeteries, mounds, caves, ruins, and lake dwellings gave evidence of the high antiquity of the art in both continents. The researches of Holmes and Willoughby on mound pottery; of Yarrow and Schumacher in southwestern California; of Cushing, Fewkes and Hough in ancient pueblos; of Nordenskjold and Pepper in the cliff-dwellings of the Southwest; of G. O. Dorsey, of the Field Columbian Museum, and many European explorers in Peru, demonstrate that no changes have taken place in this respect, either in the variety of the technical processes or the fineness of the workmanship. There is an unbroken genealogy of basket-making on the Continent, running back to the most ancient times."

No one of these statements has to my knowledge been superseded, nor even seriously questioned. Fragments of ancient basketry have been found in various parts of the Southwest, apparently antedating the development of Pueblo life. That it was a pre-Pueblo art has been satisfactorily proved by the finding of

specimens in débris underlying the earliest Pueblo remains. Also, remnants of basketry have been found in conjunction with the remains of every stage of Pueblo culture from the earliest stratum to the latest, and basket-making is still a flourishing art in the Southwest. Through every stage of their existence all of the Pueblo communities have been pottery-makers; most of them have been basket-makers. Most of the non-Pueblo tribes of the Southwest have been basket-makers, and still are; some of them have made pottery of slight esthetic value. So basketry and pottery have been and still are contemporary arts throughout the Southwest, the former being of earlier origin in certain regions, probably later in others. Professor Mason's statement, "There is an unbroken genealogy of basket-making on the continent," applies perfectly to the Southwest.

In the light of the foregoing facts, my reasons for refusing to accept the term "basket-maker" as a name to designate a pre-Pueblo people of wide distribution throughout the Southwest will be understood. There is no conceivable excuse for such nomenclature.

Basketry was and is woman's art. From it probably developed bead work and the weaving of textiles such as belts, blankets and cloth for protection from the elements and for decorative purposes. Basketry is the mother of a group of the most exquisite of arts, the practise of which from time immemorial by woman has, more than any other one thing, developed the superiority in taste, the desire for perfection in color and texture, the love for handwork that have made her the home-maker.

One of the earliest products of weaving in the Southwest was the fur and feather robe that is found in the cliff-dwellings and ancient pueblos. The best speci-

mens are recovered with the mummies of the dead in burial crypts and refuse heaps. This burial robe, originally used as the clothing of the living, became a wrapping for the dead. It was made of cord consisting of rabbit fur and yucca fiber, which was sometimes replaced by the shredded rib of eagle or turkey feather. The weaving of this cord into a robe was done by the simplest possible process. Plentiful remains of cotton cloth are found in graves and refuse dumps, and occasional specimens of human hair or the hair of wild animals woven into belts or pouches are recovered.

The great impetus to blanket-weaving came with the introduction of sheep by the Spaniards. Both Pueblo and Navaho took up quickly the weaving of wool with a primitive loom. The Rio Grande Valley communities practised both basketry and blanket-weaving, but these arts never rivaled pottery-making in their favor. The Hopi and Zuni became expert weavers in both cotton and wool and practise the art to this day. The making of skirts, tunics, kilts, sashes, belts and ceremonial garments constitutes one of the major arts of these villages. No other line of aboriginal handwork, with the possible exception of basketry, displays such consummate artistry. Patience and skill that are nothing short of phenomenal are exhibited in the making of these fabrics that are now among the most precious possessions of museums and art collectors.

The Navaho made of blanket-weaving not only a fine art but a profitable industry. The semi-nomadic pastoral life exactly suited their disposition. They rapidly acquired large flocks, discovered the plants that would yield beautiful and lasting dyes, devised the simple apparatus needed in weaving, developed marvelous sense of design and facility of hand and eye. As

a result the "Navaho blanket" has become known far and wide as a thing of beauty and utility. It has become the major resource of the now most numerous of American Indian tribes, has dominated their culture, and contributed more than any other one thing to their welfare and virility. It has weathered the degenerating influence of commercialization and is an outstanding illustration of how an esthetic factor may shape the destiny of a people.

So these arts of aboriginal American women survive as a reminder of woman's place in the long march toward civilization; incidentally, man's, also. Her life forces have been expressed through her fingers; man's, through his fist, and the whole long cultural process is recapitulated in every generation. Huckleberry Finn sticks to his hogshead and refuses to have his ears washed, but adolescence safely passed and the time is at hand when he will become a connoisseur in neckties and barber service and will be seen furtively looking for something "pretty" to acquire, for other use than his own. The young male collegian in a certain stage of evolution yearns for filthy corduroy trousers, while the college girl consistently adores beautiful frocks, though there may be a brief season, usually after college, when, infected with the craze of modernism, she takes to riding trousers or automobile overalls and other variants of a supposed rough and ready outfit. Nevertheless, the steady tendency of womankind has been toward refinement, which means the ideal of beauty in life reduced to practise. No other influence, not even the gastronomic art, has been so potent in attaching man to the institution upon which all society, all civilization, all progress rests, the home. As long as humanity lasts, the urge to make and beautify a home will be the transcendent motive in

human life. The home, the fireside, and what they stand for will for ever impel man to his mightiest endeavors and assure to woman the supremacy she has gained through immemorial devotion to the social foundations. Have no fear that the home will permanently decline or the family disintegrate. Woman is too wise to give up what she has won with such infinite patience and tact, and man knows that through the ages his supreme satisfaction has been in building shrines for his mate to beautify. These are some elementary facts of anthropology, the understanding of which would restore the tranquillity of multitudes of good people who are worried about the present state of society. It is simply a transient condition, the causes of which are not far to seek. What I am trying to point out here is that what is most worth-while in our modern social order may be traced back to the primal urge of woman, by no means lost, to do beautiful things with her fingers.

Such are the lessons derived from the simple, silent races of the past, and

"The things that you learn from the yellow and brown
Will help you a lot with the white."—KIPLING.

4. Pottery and the Plastic Arts

In the art of pottery-making among the Pueblos, both ancient and modern, we have an example of such perfect integration of the useful, the esthetic and the religious elements that it becomes quite impossible to classify the ceramic art as one of utility or of pleasure. There can be little doubt that the use of clay for making of simple articles of domestic economy preceded any esthetic consideration. But here, as with basketry, pottery-making was largely woman's art, and the carrying over of an industry into the realm of the es-

thetic has through all time been the woman's part in the evolution of culture. Her urge to beautify every object of utility resulted in pottery's becoming, in the Southwest, one of the outstanding fine arts of the world. The embellishment of the water-jar, food bowl or cooking pot became an imperative factor in its making.

The use of clay among the Indians of the Southwest appears in the earliest culture levels in the form of crudely shaped, sun-dried dishes produced by the basket-making peoples who preceded the sedentary pueblos. There are evidences that the people of the lower San Juan Valley, especially those of the northern tributaries, Grand Gulch, Cottonwood and White Canyons, were beginning to get the idea of shaping clay into useful forms for domestic purposes. The same is noticeable in the excavation of the older sites of Mimbres Valley, and it is safe to predict that on more careful study the same phenomena will be discovered in the desert communities of the Pacific slope, in the Gila Valley where the use of the adobe soil so early came into favor for building purposes and became one of the dominant factors in the evolution of the culture of that area. I have every reason to believe that the same thing will be found all over the inland basin of Chihuahua, Mexico.

The successive stages in the development of pottery-making, from these first crude efforts to what came to be the outstanding art of the Pueblos, ancient and modern, have been worked out patiently and convincingly by Kidder and Guernsey in the lower San Juan Valley. I have never been able to see any good reason for making the definite separation of these stages into four specific periods representing the work of four distinct peoples: namely, the basket-makers, post-basket-makers, pre-Pueblos and Pueblos. They seem to me

to be the logical and essential stages in the evolution of the Pueblo Indian culture of the American Southwest. However, it is unprofitable to split hairs too acrimoniously over such a subject. Nomenclature is simply a matter of convenience, and classification is not the vital thing. So if there are those who like this arrangement for a permanent working plan, as Lincoln said, "that's what they'll like." For my own use I find it rather inconsistent and prefer to get along without using these specific terms.

It seems certain that in the American Southwest we shall be able eventually to work out an unbroken history of the development of pottery-making, as with basketry and house-life. Pottery is to be studied from two points of view: namely, the purely esthetic as an illustration of evolution in art and, secondly, as a means of tracing the movements of peoples and defining their geographical limits. The latter purpose has of late completely overshadowed every other phase of archæological research in the Southwest. The study of pottery seems to have a peculiar fascination for almost every archæologist. Early in the second decade of the present century Dr. N. C. Nelson, of the American Museum of Natural History, commenced an examination of the refuse heaps of the Southwest which eventually took him over the greater part of the San Juan and Rio Grande areas. While not the first in the study of southwestern stratigraphy, Nelson made a much more sweeping investigation of the chronology of Pueblo sites, using pottery as the principal means of establishing the chronological record, than any other archæologist has, before or since. In language not strictly scientific, he "started something." It would be hard to find a student of southwestern archæology of the last twenty years who has not

been carried away, more or less, with the study of pottery; there are those who apparently look upon culture stratification as embracing the entire science of archæology and who regard the pottery record as the key that is to unlock the doors of antiquity. Just why chronology should be considered of such vast importance is difficult to understand. I have myself suggested occasionally that time is the essence of archæology, but in more serious moments I know that the laws which determine the unfoldment of human potentialities are of first importance and are not altogether subservient to the time factor.

While pottery, next to stone, does afford the most lasting evidence of the culture growth of primitive man and is, with the exception of textile art, the most expressive of individual and racial character, its value as a record must not be exaggerated. This was pointed out by William H. Holmes in his monumental study of aboriginal American pottery:

"Notwithstanding the very decided advantages of the ceramic art over the other arts as a record of prehistoric peoples, its shortcomings in this direction are apparent at a glance. The student is embarrassed by the parallelisms that necessarily exist between the arts of widely separated peoples of like grade of culture and like environment. Even the discriminating investigator may be misled in his efforts to use these relics in the tracing of peoples. Other classes of confusing agencies are interchanges by trade, multiple occupation of sites, adoption of pottery-making captives, and the amalgamation of communities; by all of these means works of distinct families of people may in cases be thrown into such close association as to make ethnic determinations difficult and uncertain.

"The danger of making erroneous use of prehistoric works of art in the identification of peoples is especially

great where the number of available relics is limited, as is very often the case in archæologic collections. Conclusions of importance respecting a given people may in this way be based on evidence afforded by intrusive products or on exceptional conditions or phenomena—conclusions difficult to controvert and increasingly difficult to correct as the years pass by."

The presence or absence of pottery-making is not to be taken as a criterion of the general culture level of a people. Much depends upon environmental conditions, especially the presence of clay suitable for modeling and of tempering material. Mainly, however, it is dependent upon mode of life. No people in the nomadic stage would be likely to take up pottery-making. It is an art that pertains to the sedentary life. The long series of experiments necessary to the successful manufacture of pottery could not be undertaken by roving people. Once settled down and the agricultural life established, the long quest for clays, tempering material, and the minerals and plants from which colors for embellishments could be derived would begin. The keenness of observation required, the patience in experimentation, the accuracy of color sense—all these are factors to be considered when we think of the evolution of the plastic arts. What better course of racial and individual education could be devised?

It is not within the province of this work to go into the technical study of plastic art. For the study of pottery-making, in general, there is no other work comparable to that of William H. Holmes published by the Bureau of American Ethnology. While it is devoted mainly to the "Aboriginal Pottery of the Eastern United States" it is indispensable to the student of ceramics in any part of the world. This, together with

other papers by Mr. Holmes on the history and technology of pottery, provides a reliable groundwork for students in every phase of the subject.

It is probable that in the final evaluation of the Indian arts the function of pottery and basketry will be considered of far greater importance in the evolution of esthetic sense than in determining chronology and the migrations and geographical limits of peoples. This phase of the study is receiving comparatively little attention. Mr. Kenneth M. Chapman, for twenty years on the staff of the School of American Research, is the outstanding authority on the esthetics of southwestern pottery. Mr. Chapman was given the opportunity to devote himself almost entirely to this study for a considerable number of years. His resources were supplemented generously by the Indian Arts Fund, thus placing at his disposal large collections of modern Pueblo ware. These, added to the ample collections of the School of Research from its excavations all over the Southwest, constitute as complete a record of the potter's art in the Southwest as can be found up to the present time. Students of Indian design or of any of the esthetic phases of southwestern Indian pottery are commended to the study of his work.

For an up-to-date work on Pueblo pottery-making, the excellent publication of Dr. Carl E. Guthe at the University of Michigan is especially recommended. It is based on a study at the Tewa village of San Ildefonso in New Mexico and is a reliable guide to the student in beginning the study among the Pueblo villages.

It has been a matter of great satisfaction to note the revival of pottery-making that has taken place during the past few years among the Pueblo Indians. One has the feeling that aside from its noticeable economic

advantage it means much to the happiness and contentment of these people. The consciousness that they are producing masterworks of art that are sought for and appreciated by those whom they have been taught to look upon as their superiors in culture must help to restore and preserve the self-esteem which is necessary to the continued growth of any race. A number of outstanding artists have been mentioned by name in a former chapter of this work. While this is apparently of very little concern to the Indian, it is, from our standpoint, most fitting that these modest artists and craftsmen should become known to the world.

Chapter IV

SUMMING UP

The Pueblo world is a singularly inviting one. There is in it the simplicity and serenity and charm of a time to us long dead—with them, too sacred to let go. In it, too, there is a suggestion of a world of spirituality and grace to which we have not yet attained—a vast world in time and space, physically shrunken now to the few attenuated villages in the Rio Grande Valley and on the desert to the west.

What is the present state, and what the probable fate of these little ethnological islands always on the point of being submerged by the seas of modern progress with which they are surrounded?

Reviewing what has been said and done about the Pueblos, from the narrative of Castañeda down to the present time, the literature of which makes a sizable library of information and misinformation, one finds an impressive array of material in the form of reports, official and unofficial; recommendations advanced with the assurance which little or no knowledge gives; resolutions that implore and demand and entreat; scientific tomes in which grains of truth laboriously discovered are laboriously entombed; magazines and newspaper articles which suggest neither labor nor truth; all intended to shape public opinion and official action with reference to the Pueblos.

I hasten to disavow all claim to final knowledge of the Pueblo Indian and to suggest that there are others writing about him who know even less. His mind is as inscrutable as that of the Oriental. No psychologist lives who can obtain his intelligence quotient. The

method used in appraising the mentality of the American soldier can not be applied to the mind of the Indian. By following out the expressions of his spirit in works that have lived through the ages and by observing the reaction of his mind at the present time to the phenomena of nature about him, one may roughly accomplish his mental measurement.

The Pueblos are nine-tenths in the realm of archæology now, and the only western continent art we have that is "one hundred per cent. American" is the art of the Indians, mainly of the Pueblos. That we can, in the American Southwest, "catch our archæology alive," in Lummis's classic phrase, is due to one of the most remarkable and nearly complete adaptations to a definite environment that has occurred in the history of the human race. A Pueblo Indian at an afternoon tea in New York is out of place. In his own Southwest he is a harmonious element in a landscape that is incomparable in its nobility of color and mass and feeling of the Unchangeable. He never dominates it, as does the European his environment, but belongs there like the mesas, skies, sunshine, spaces and the other living creatures. He takes his part in it with the clouds, winds, rocks, plants, birds and beasts: with drum-beat and chant and symbolic gesture keeping time with the seasons, moving in orderly procession with nature, holding to the unity of life in all things, seeking no superior place for himself but merely a state of harmony with all created things—the most rhythmic life, so far as I know, that is lived among the races of men. The Pueblo seems a perfect factor in the unchangeableness of his elemental environment.

Strictly speaking, however, unchangeableness is not of this planet. Here and there the mighty forces appear

to have halted, but they have only slowed down. The Southwest has resisted change stubbornly during the span that we can vision. Nevertheless, changes are manifest. Forests have receded; desert sands have crept over once fertile valleys; plants have toughened in fiber, and animals have modified their habits and appearance in the effort to meet the inexorable law, "Adapt or die." I have personally noted the extinction of groups of pine trees that have long struggled for life against the encroaching desert, and I have witnessed the dwindling of a community of people to the last lonely survivor.

Inquiring into the present condition of the Pueblo Indians, one meets with diverse views. Statements that they are decreasing numerically are erroneous, as are similar statements with reference to the Indian population of the United States. The available statistics on the subject are as reliable as other United States census reports.

The following tabulation of population for the Pueblo villages was made in January, 1925:

Name of Pueblo	Pop. 1904	Pop. 1924	Inc. Pct.
Taos	465	622	33.8
Picuris	101	105	04.0
San Juan	419	458	09.4
Santa Clara	251	339	35.1
San Ildefonso	154	97	37.1*
Nambe (Pojoaque)	100	128	28.0
Tesuque	86	111	29.1
Cochiti	217	267	23.1
Santo Domingo	846	1054	24.6
Acoma	734	955	30.1
Laguna	1366	1901	39.2
Isleta	979	1003	02.5

*Decrease.

Name of Pueblo	Pop. 1904	Pop. 1924	Inc. Pct.
Sandia	79	92	16.0
San Felipe	489	526	07.5
Santa Ana	224	224	.0
Jemez	489	580	16.5
Zia	116	154	33.0
Zuni	1521	1949	28.0
	8645	10565	22.2

Only one pueblo, San Ildefonso, shows a decline. This was due to a high mortality from influenza a few years ago.

For the entire United States the result is as follows:

Indian population of the United States, 1904..274,206
Indian population of the United States, 1924..346,962
Increase in 20 years, 72,756—26.5 per cent.

Compare this with the entire population of United States.

Population, 1900 75,994,575
Population, 1920 105,710,620
Increase in 20 years 29,716,045—39 per cent.

When it is considered that the population increase for the United States includes the large influx of European immigration (a factor not affecting Indian population), it is seen that the Indian is keeping pace fairly well with the white race in natural increase.

The extensive publicity on the "startling decrease in our primitive population" is groundless. Especially erroneous is the statement that "the American Indian is dying off at an alarming rate in the great Southwest."

Equally misleading are the much published statements concerning disease among the Pueblos. The appalling "scourge of syphilis" has been much exploited.

On this subject we have the valuable report (1924) of Dr. Don G. Lynwalter on the venereal disease survey of the Pueblo Indians which I summarize by permission of the Secretary of the Interior.

This survey, incomplete but well conducted, is reliably indicative of venereal conditions among the Pueblos. It includes examinations with Wassermann tests in fourteen towns. The summary is as follows:

Total number of specimens..... 426
Total number of positive Wassermanns... 43
Percentage of syphilis.....10.09

The most satisfactory test was that of the pueblo of Laguna where 157 subjects were examined, disclosing 11 positive cases—the percentage of syphilis for the seven Laguna villages being 7.06. At San Felipe where 48 were examined the percentage of infection was 6.25. At San Juan where 38 were examined the percentage was 7.89. At Cochiti, 33 examined, the percentage was zero. At the declining pueblo of San Ildefonso, 13 examined, the percentage of infection was 7.69. The late Dr. James A. Massie, for several years physician to the government Indian School in Santa Fe, informed me that there is virtually complete absence of hereditary syphilis in the health record of the pupils; the aggregate of those passing under his notice being several thousand, representing all the northern Pueblo villages, with a considerable number from other villages and tribes.

Without going into a detailed presentation of the subject it is safe to say that in comparison with their white neighbors and with the general report of the United States Army enlistment the Pueblo Indians have a fairly clean record, while in comparison with villages of colored population in the South the result is decidedly in favor of the Indians.

The most serious disease among the Indians is

trachoma. Here again nothing is to be gained by exaggeration. Personal investigation in the Pueblo villages, confirmed by official reports, disclose a few cases of blindness, mostly of long standing, and much trachoma mostly in the curable stage.

The trachoma situation has been authoritatively summarized by Dr. L. Webster Fox, trachoma expert. In an article in the *New York Times,* February 8, 1925, after speaking of the treatment of trachoma at the Carlisle Indian Training School and on the Blackfoot Reservation he says: "Those results were so much better than had been possible by the conservative treatment that they were brought to the attention of the authorities in Washington, to the end that an active campaign was begun in which the Indian country was surveyed for the disease and specialists were assigned to different sections, operating upon those requiring it and instructing the physicians of the service how to perform the operations. In some instances the physicians were assigned to the metropolitan centers for special instruction. In a visit to the Navaho Reservation in January, 1925, I was invited to conduct a teaching clinic and was highly gratified to find that the men of the service were as enthusiastic over the campaign as those of us outside. At present the Indian office has an authorized force of seven eye doctors and thirteen nurses, who travel throughout the country treating trachoma and other eye diseases. Among the two hundred school and agency physicians there are several who are already trachoma experts. There is one ophthalmologist who devotes his time to instructing physicians and organizing trachoma campaigns. As is so frequently the case, when comment is made, some advise a radical change of the organization commented upon. Thus it has been suggested that this

entire matter be handled as a special condition by the public health service; but after seeing the workings of the Indian bureau, and coming in contact with the patients as well as the physicians and the authorities of the Indian bureau, I am convinced that these physicians, with occasional help from the outside and adequate equipment, are the proper ones to handle the situation, as only they know the Indian and appreciate his racial temperament, peculiarities and environment. Their ability to speed up when the proper incentive has been provided has been very amply shown, but an interested congress could make their load lighter by adequate appropriation."

Turning to the economic condition of the Pueblos one finds that their standard of living compares favorably with that of their white neighbors. That, to be sure, is not a high one. The entire native population of New Mexico exists on a scale that seems to us very meager, but it is above the level of actual suffering and illustrates the fact that happiness does not depend entirely upon material affluence. They, like the Pueblos, are normally a happy and contented people. Moreover, the Indians and native New Mexicans have usually lived side by side on most friendly terms. This fact is in part accountable for the penetration of the Pueblo grants by their white neighbors.

The question of Pueblo land titles is well on the way to final adjustment. The Pueblo Lands Board established by recent act of Congress is in action with officers in Santa Fe, and the disputed titles are being disposed of expeditiously and with a minimum amount of litigation. It is clear that ample justice is being done to every Pueblo community in the matter of lands. Scanning the list of lawyers who have held the office of

attorney for the Pueblos under the United States government one knows that the Indians have not been without capable and attentive legal service, nor are they now.

On the question of the Indian ceremonies much emotion has been wasted. They are vital in the life of the Indians. They are of a highly esthetic character, not attended by as immoral consequences as are the social dances of the whites, are not dying out and not likely to. On the contrary, ceremonies that had disappeared are being revived and the Indians are preserving their own self-respect by cherishing their native culture which has in it elements of nobility worthy of any race. There is no religious persecution of the Pueblos, no effort is now being made to suppress their dances unless pernicious features crop out, and in such cases they are more amenable to advice than the youth of our own race.

The condition of the Pueblos improves as their self-respect and self-reliance are fostered by the development of their resources. Nothing is gained and much lost by arousing in them the feeling of self-pity. No good has come from inspiring in them hatred and distrust of the government or of their white neighbors.

The effective help that the Pueblos are receiving from individuals and societies, outside of the large government appropriations, is from well-directed efforts to develop their special abilities, improve their arts and crafts, increase their output and find for them better markets and fairer prices. Steady improvement in Indian education is apparent to every one who studies the subject without prejudice.

With the obvious improvement in the government's Indian policy in the past few years; with the liberal appropriations made by Congress for education, sanitation

and economic betterment; with many friendly societies and individuals looking out for his interests, it would seem that the future of the Pueblo Indian is brightening. It should not be forgotten, however, that there is always danger of "too much white man's medicine" in dealing with the Indian and that it is what he does for himself that makes for his future character and progress. A good plan is to leave him alone in most of his personal affairs, merely giving him the opportunity to select and adapt what we have to offer under the guidance of his own judgment.

However, our Pueblo problem is far from being solved. There is no escaping the fact that it has been dismally muddled many times in the past, is now in some respects, and may be made worse than ever at any time.

Only incurable optimism saves us from despair. Congresses from time to time suffer curious lapses of intelligence; the Indian Office may fall into political hands; religious and benevolent associations become hysterical. Consider the record of the past. The order has gone forth from time to time for several decades that the Indian dances must cease; that these pagan rites will no longer be permitted to obscure the path to citizenship and enlightenment. It is the imperturbable disposition of the Indian himself that saves the situation. Thanks to our two-party system, official Washington is a variable body. Administrations come and go. Not so the Pueblo. From his mesa top he looks confidingly to the Great Father in Washington, viewing with approval the changing personnel that wrestles with his affairs. He knows that if the pressure just now is on his "obscene" dances these will be forgotten soon in an exciting onslaught upon his peyote evil and that another hair-cut order is due somewhat later. Thus.

without obtrusively resisting the mandates of the Great Father with reference to his rain prayers, he manages to keep the sacred fires burning from age to age, and in the process of official fluctuations his hair returns to normalcy.

When there is nothing else to save the Indian from, there is always the terrible peyote to fall back on. Whisky came to him with the civilization of the white man. He accepted it rather more eagerly than he did some of the other elements of Caucasian culture, and its effects were more deadly upon him than upon the long immunized Europeans. It killed Indians off at a rather rapid rate, and moreover introduced the homicidal tendency of the "superior race" to an alarming extent. To his credit it must be said that the Indian gave to prohibition a welcome not accorded to it by the white man. Reservation superintendents and Indian police testify that ninety per cent. of their difficulties vanished when whisky disappeared. Peyote, (Nahuatl, *peyotl*), the cactus "button" of the lower Rio Grande Valley, on the other hand, has never been productive of disorder. On the testimony of many Indians, fully as reliable as that of an equal number of whites, no Indian has ever been moved to beat up his wife or any one else, or shoot up the reservation, while under the influence of peyote. It never induces violence or quarrelsomeness, but the exact contrary. The users testify to experiencing only feelings of quiet contentment and good-will toward their fellow men; find their sense of color, which is always keen, highly intensified; they experience no loss of self-control but even such habits as extreme drunkenness are controlled by this benign gift of the desert. Consequently it long since came to be used as a religious rite, as temperately as the sacrament with

us, and as reverently. Tribes using it assert that not a single case of debilitation or any of the indications of the dope addict can be traced to the use of peyote. It might therefore be well to refrain from the perennial efforts to repress it, and leave the Indian alone in this as in other phases of his religion.

The Indian is no fool. His convictions are for the most part based on sober experience. Long has he pondered the gifts of nature, of deific power, and found them good. So all the gifts he offers to nature and to fellow man are good. Never does he offer an evil gift, and, since all that he enjoys, food, children, life itself, are gifts from nature and fellow man, he tries to return them in kind. His first gift to every stranger is food, shelter, rest, hospitality; to the departing guest something for substantial remembrance. The Indian woman unclasps her most precious bracelet or necklace to decorate her departing friend. You think she can not afford it, as when the peace party visits its neighboring tribe bearing gifts of their most needed substance; but they return laden with equally precious gifts, and regardless of any material consideration the needs of the spirit have been satisfied. What the white man calls the "giving away" ceremonies and tours of the Indians is the survival of the ancient peace pilgrimage.

As to the gifts of the white man the Indian entertains a reasonable doubt. Among them were firearms, fire-water and other agencies that kill, such as tuberculosis, syphilis and numerous other scourges; a new style of costume which has proved to be less sanitary than his ancestral garb—so scanty as to be uninviting to disease germs—a religion which seems rather barren of results as he compares it with his ancient philosophy; and a system of education that seems to him devoid of

some essentials of the learning that belongs with true manhood. Benjamin Franklin in some "Remarks Concerning Savages of North America" recites the answer of the six tribes to the commissioners from Virginia who informed the Indians that they would be pleased to provide for the education of a limited number of Indian youths. The government would see that they were well provided for and instructed in all the learning of the white race. After the consideration which their notion of politeness demanded they replied, expressing their sense of the kindness of the Virginia government. They stated, "We know that you highly esteem the kind of learning taught in those colleges, and that the maintenance of our young men while with you would be very expensive to you. We are convinced, therefore, that you mean to do us good by your proposal, and we thank you heartily. But you, who are wise, must know that different nations have different conceptions of things; and you will therefore not take it amiss if our ideas of this kind of education happen not to be the same as yours. We have had some experience of it. Several of our young people were formerly brought up at the colleges of the northern provinces; they were instructed in all your sciences; but when they came back to us they were bad runners, ignorant of every means of living in the woods, unable to bear either cold or hunger, knew neither how to build a cabin, take a deer, nor kill an enemy; spoke our language imperfectly; were therefore neither fit for hunters, warriors, nor counselors—they were therefore totally good for nothing. We are, however, not the less obliged by your kind offer, though we decline accepting it; and to show our grateful sense of it, if the gentlemen of Virginia will send us a dozen of their sons we

will take great care of their education, instruct them in all we know, and make men of them."

On almost every question relating to the welfare of the Indian there is violent disagreement. Many believe that the Pueblos are in dire want to-day. The truth is that among them there is often some hunger, but no great suffering. The thought of hunger is about as awful to us as the reality is to them. They have been down to the iron ration a considerable part of the time in centuries past, but I have never heard of a case of starvation among them. It is one of the marvels of adaptation to see Indians of the Southwest, with no money to buy food, subsisting and apparently in good condition in a region where we can discover nothing more edible than mesquite. A white man marooned in a mesquite thicket in southern Arizona would promptly starve to death; but a Mojave woman in the same place would keep her brood in fair condition on the gifts of the desert according to the season: tender roots, new leaves, green pods and matured beans. As for clothing, give a Mojave woman access to a swamp of willows and she will keep her family clothed in latest Colorado Basin styles from the bark, and in addition produce most of the necessary utensils for housekeeping, as well as dolls and playthings for the children. So we must not be too distressed when we see Indians with no visible means of sustenance. They have meat that we know not of, and a certain efficiency that seems uncanny. Feeding a family off a mesquite patch is nothing short of a miracle to us, but to them a commonplace affair.

It is true that the Pueblos are succumbing to certain depravities which seem avoidable. They buy white flour at the store in place of grinding their own grain on the

metate stone by hand. They lose the exercise of the grinding, and, moreover, bread from fine bolted white flour is even worse for the Indian than for the white man. The tin lard pail is rapidly taking the place of the beautiful olla carried on the head and the Indian woman is therefore destined to lose that erect, measured, dignified carriage which was acquired through ages of pacing up and down the cliffs in the capacity of city water-works—losing a still greater thing, the love for the beautiful work of art of her own creation and the desire to create objects of beauty; gaining instead that deadly state of mind which is characteristic of inferior people, a passive toleration of the commonplace.

Let no one think that legislation will settle the problems of the Pueblo Indians. They are not to be settled by law, though some relief may be obtained in this way. Let no one think that they are to be settled by stirring up the emotions of New York or assaulting official Washington. There has been no closed season on the Indian Office in my lifetime. Against the endemic criticism of half a century it has developed almost perfect immunity. But in twenty-five years of contact with officials of the Indian Department, from commissioner down to reservation employees, I have found few disposed to resist cooperation. Any plan should be given a trial always before resorting to violence.

The Pueblo problems are those which have inevitably arisen through contact with a stronger people, and back of this lie ages of experience which have prepared them for a kind of existence that is denied them in the evolution of modern society. Much thought will have to be given to the matter and old prejudices and beliefs laid aside if these people are to survive. I believe it would be possible to turn the tide which has set so strongly against

them but it would necessitate measures which in all probability will not be permitted by those who control their affairs, simply because of the general inability to understand a people so unlike ourselves, or appreciate a man, motive or mentality that does not bear our own impeccable image. But the effort must be made. If I may be permitted to offer one more solution, this is not a job for emotionalists or sentimentalists or politicians. Matters of this kind nowadays are placed in the hands of specialists. Sanitary engineers are called in to clean up infected areas and put them in the way of progress. The Pueblo question is one for specialists in human conservation. If the little pueblo grants can be made inviolate for the Indians, treated as human game preserves and the occupant accorded the wise and kindly protection that we have thrown about the disappearing buffalo, there is no reason why the results should not be equally satisfactory.

PART THREE
THE REALM OF THE PICK AND SPADE

Hail, solitary ruins! holy sepulchres, and silent walls! You I invoke. . . . What useful lessons! what affecting and profound reflections you suggest to him who knows how to consult you.—VOLNEY

The worldly hope men set their hearts upon
Turns ashes—or it prospers; and anon
Like snow upon the desert's dusty face
Lighting a little hour or two—is gone.

—OMAR KHAYYAM

Chapter I

Archæological Research in the Southwest

1. *The Archæologist's Quest*

We set out to reconstruct the life and times of the ancient people of the American Southwest. It has required a long series of explorations in many and varied fields. In the course of these wanderings, you who have gone all the way must have found something of the charm of the great Southwest. It is not alone for the naturalist, the artist, the philosopher, nor for the Indian who is something of all these. It is for every mind that can see relations, for every spirit that is moved by harmonies of color and light and form. All must have, by this time, pictured its vast canyons, mountains, mesas and deserts, and acquired something of the sense of reverence for space and silence. All these are well-nigh immutable factors, evidences of the play of colossal forces that have shaped a world. In the midst of it all is wreckage, débris of human life, buried in the soil, clinging to the cliffs, piled upon mesa tops. Here is material for meditation, for history, for drama.

We are now to challenge this realm of silence to give up its secrets. We are to summon back the vanished generations, and bid them enact for us the drama of their years, the tragedy of their ending. We are to clothe the bleaching bones of dead towns with new flesh and animate anew a race of men. If the archæologist can not resurrect the sleeping past, cause the embers of ancient life to glow again, he has dug to no purpose. This is the domain of pure archæology, the realm of the pick and spade, the place, in another of the fine phrases of Lummis, "where the stones come to life."

This would seem to be a realm of the unknown and unknowable. It would be were it not for the dwindling communities that have been described in previous chapters, living in the gloaming of a long past, ordering their lives by the teachings of nature and the wisdom of the ancients, perpetuating in culture and cult the essentials of the ancient life; in a real sense existing as contemporaries of their ancestors. So in the languages, traditions, myths, folk-lore, dramas, songs, ceremonies and arts, we have the keys to antiquity. No one of these will unlock the door. Each one plays its part. Hence the long chapters of exploration have been necessary in order that we might find the roads into this land of buried towns.

The advent of the human species into this region is obscure. No great antiquity is indicated, as compared with the age of man in Europe. We can not postulate a paleolithic or neolithic man in any part of the New World, or follow any Old-World pattern in classification. Any statement as to length of occupation in the major culture centers of the Southwest is a guess, and schemes of chronological sequence are still tentative. For all practical purposes we may here begin the study of man with the earliest stages of the life of the ancient Pueblos and cliff-dwellers. Remains which some interpret as belonging to a distinct people antedating the Pueblos are to be viewed with an open mind, but with entire independence of observation and judgment. Recent announcements of great antiquity (twenty thousand to thirty thousand years) in the Southwest bear the earmarks of immature conclusion. One gains an impression of too great eagerness in contending for Pleistocene man on slight evidence, and of similar haste in urging the sequence from "basket-

maker" to Pueblos cultures with many intermediate grades. It should be understood that there is much that is hypothetical in the chronological scheme, and that, regardless of whether the sequence is established or not, the nomenclature is utterly unscientific and should be rejected. The story of man in the Southwest is one of slow adaptation to a peculiarly definite and elemental environment. Changes have occurred from time to time in culture, languages, even in physical type. The causes and importance of these changes are as yet obscure.

2. Work of the Veterans

A brief history of the origin and progress of the study of early man in the Southwest may here be in order.

The foundations on which southwestern archæology have been built were laid in the last quarter of the nineteenth century. Many valuable reports were written prior to that time but nothing that would afford the basis for a substantial scientific structure. William H. Holmes was the founder of the science. He prepared the way through his geological studies in the Southwest and then proceeded with his masterly interpretations of the remains left by man. He wiped out the mythical ideas of "vanished races," demonstrating that the ancient cliff-dwellers were simply the Pueblo Indians of the centuries preceding the European occupation. We owe it to him that all students of man now concede that the archæology of the American Southwest is the early history of the Pueblo Indians. It is regrettable that there is still need for clarification. A veil of false mystery still shrouds these regions in the popular mind. The special writers want buried cities and sepulchres comparable to that of Tut-ankh-Amen and create them

for the public if the archæologist will not. The belief is still too prevalent that distinct races flourished on and long ago vanished from the American continent. The public has never accepted the fact, and archæologists have been singularly timid about asserting it, that in studying the archæology of those regions we are studying the early history of Indian people who still survive, who built no cities, who left no tombstones or sarcophagi. In some respects the science of American archæology is still in the romantic stage. The great service done by William H. Holmes, in clarifying all this and setting the students of early America on the right road, did not cease with the achievements mentioned above but has steadily continued for half a century. He has stood like a rock against the acceptance of paleolithic man in America on insufficient evidence and has set a standard of scientific exactness that will enable us to avoid some of the pitfalls that abound in archæology.

Adolph Bandelier followed with a study of the southwestern historical archives. His reports, published by the Archæological Institute of America, are part of the essential equipment of every student who enters the southwestern field. An infinite amount of idle speculation is saved by having at our disposal the records of explorers who traversed the ground, witnessed the scenes and described the people that are now in the archæological realm. Incalculable is our debt to Adolph Bandelier.

John Wesley Powell, starting, like Mr. Holmes, in the geological field, sensed the importance of the study of the Pueblos, both living and ancient, as well as of the entire native American race. Through him the Bureau of American Ethnology was founded and placed under the ægis of the Smithsonian Institution. To

realize the value of Major Powell's contribution, you must look at the working library of an Americanist, see what a large section of it consists of publications of the Bureau of American Ethnology and related units under the Smithsonian Institution, and if a teacher of American ethnology and archæology, see if you can find any sounder principles on which to base your work than in the administrative reports of Major Powell.

Charles F. Lummis, during the same period, set about the task of causing this country to "know the Southwest"; moreover to "humanize" our knowledge of this most characteristic region of the United States. No job was ever more perfectly done. In the course of forty years he made the country and its people his own. Incomparable in descriptive power, he wrote the books that travelers who would see and know the Southwest through all time will carry with them. The Southwest of Charles F. Lummis is the Southwest that we want known of all men.

J. Walter Fewkes, at first under the auspices of the Hemenway Expedition, and later for the Bureau of American Ethnology, commenced in the 'eighties his studies of the Hopi, together with the ruins adjacent to their habitations. The work then inaugurated by Doctor Fewkes continued incessantly to the end of his life. His excavations extended to practically every section of Arizona and portions of Colorado, Utah and New Mexico. Upward of a hundred indispensable reports bear witness to his amazing industry, disclose the breadth of his scholarship and provide a body of basic knowledge for all future students of native American culture history.

Other outstanding investigations during the last quarter of the nineteenth century were those of Cush-

ing at Zuni; Mindeleff on Pueblo architecture; Pepper's excavation of Pueblo Bonito; Washington Matthews' studies of the Navaho; Hough in the Little Colorado Basin; Nordenskiold on the Mesa Verde. Hodge became a worthy successor of Bandelier in the ethnohistorical field. Indeed it may be said that with the end of the century the Pueblo region had told its story. It is not intended to imply, however, that there was nothing further to be done in Pueblo archæology.

3. Moving the Frontiers

The beginning of the twentieth century marks a new era, but not a better one, in the study of the Southwest. Up to this time the excavation of southwestern ruins had been a "free-for-all." There had been no custodianship of archæological and historical sites. Pothunters helped themselves to whatever they could get with the least possible work and expense. Finally the time came when the idea of conservation could gain a hearing. It would hardly be believed if I described the long and determined effort that was required to secure any kind of consideration of the subject. The Archæological Institute of America, the Smithsonian Institution and numerous universities finally joined in a study of the problem, and out of this emerged the Lacey Act, a general law for the preservation of American antiquities. This was accompanied by the act creating the Mesa Verde National Park. Following this, the Archæological Institute established a School of American Research, located it in Santa Fe, manned it with southwestern men, and gave it a free hand in determining its objectives and procedure. Its policies were made clear from the beginning to those who would fol-

low its varied efforts and read its literature. Its program has been in operation for twenty-four years.

Professor Byron Cummings, through the Universities of Utah and Arizona, has been active for a like period in both research and teaching. The Universities of Colorado and Denver and a few other southwestern institutions have had their representatives in the field from time to time. The University of New Mexico now maintains a Department of Anthropology and Archæology affiliated with the School of American Research. The Bureau of American Ethnology has continued its activities unabated. From outside the local group, one institution after another has entered the southwestern field, until now at least twenty colleges, universities, museums and other scientific agencies have students too numerous to be named here, engaged in the study of Pueblo archæology. The immediate future will see many more. The Laboratory of Anthropology at Santa Fe is the latest arrival in the field.

Nothing further need be done by way of stimulating interest in Southwestern archæology, but it is noticeable that the study of the surviving peoples has fallen behind. This is a matter of some surprise, for the secrets that are buried in the ruin mounds and which are so readily answered by conjecture can for the most part be solved with certainty through the living informant. It is admitted that digging facts out of the Indian mind is a more laborious process and calls for a higher type of anthropological ability than does the study of the village mounds and their contents, which invite conjectural solutions, one as good as the other. Then, too, excavation always invites collecting, and the specimens of human handiwork that have lain buried for ages have a charm for both scientist and layman that is not to be

found in the note-books of the ethnologist who has labored with living specimens of humanity.

A lengthy discussion of the new tendencies in this science can not be entered upon here. On the whole they are encouraging. A survey of the archæological efforts of the past few years discloses a lively trend toward stratigraphy. Listening in with groups at scientific meetings and at the excavations, an innocent bystander gets the idea that chronological sequence is the keynote of the science and that in potsherds we have a magic wand that will guide us through the corridors of time in the Southwest. It is a fascinating quest and profitable within certain limits. It has been in high favor in European archæology for some time and moderately fruitful there as it has been in this country.

One observes, too, that this phase of the southwestern work is pretty thoroughly bogged down in its own nomenclature, a thing that usually happens during the stage when a pattern is in process of construction into which sets of facts and observations are to be fitted. Let us hope that this tendency in the science, which at this stage may seem to represent a considerable waste of time and energy, is simply preliminary to an attack upon the great problems of human history in the Southwest.

I wish to suggest that enthusiasm for one phase of a science shall not be permitted to obscure its greater issues. We have a large body of young students coming on to be led into the realms of anthropo-geography, social anthropology, and ethno-psychology which abound in inviting problems for study. The evolution of the human mind, the influences that have shaped it into racial and social type, the esthetic, economic, social and ritualistic activities which have created it, and the cor-

responding cultural products through which it has found expression constitute a field of intellectual endeavor that is incomparable. Students are ready to enter it if teachers have the wisdom to lead—and let me say here that teachers of anthropology who have the breadth of view to make its essential correlations are at this juncture more in demand than additional researchers. The archæologist of the Southwest must learn from the forester, the geographer, geologist, paleontologist and climatologist; above all, from Indian priest and philosopher and artist.

It is certain that much digging in the near future is indicated, and this arouses our interest. We want to encourage scientific research. But the antiquities of the Southwest have come to be important economic and educational as well as scientific resources to the states of New Mexico, Arizona, Colorado, Utah and Nevada; and because of this great interest in southwestern excavations, we are facing a new problem in conservation.

Owing to the spectacular character of the southwestern archæological material, its availability for museum exhibition and for attracting funds for further expeditions, and because of the comparative poverty of southwestern institutions, eastern and some foreign museums are congested with collections while only pitiful remnants remain in the region that produced such cultural wealth. Of the thousands of ruin mounds, once abounding in archæological treasures, only a few can now be found that have not been dug over. It requires long, expensive and comparatively unproductive excavation now to secure adequate collections for study. The southwestern institutions realize, perhaps tardily, that cultural and historical material has high educational value and that these characteristic resources afford one

of the most profitable fields for training students in scientific research. It is highly important that they be preserved for future study, not only for the immediate time but for the far-distant future.

The people of the Southwest should look to their own institutions for the conservation of these resources. As a first step, the five states of the Pueblo region might ascertain by archæological survey what resources they have of this character; in what condition they are; what important collections have been made; and where collections that have left the state can now be found for study; what the possibilities are for securing the return of material to the state from which it was excavated; how the ancient ruins are situated as to ownership; if on Government lands, could the states, by proper representations to the national government, secure a condition in excavating permits that a certain part of the material found should be the property of the state where excavated and retained in the state university or state museum, if one exists. In principle, this would be analogous to the rule in the Forest Service, whereby a percentage of all revenues derived from the forests goes to the states. If ruins are on state land, what measures should be taken for their protection; if on private lands, what can be done about securing them for the state. A measure of cooperation between the states would be of advantage in this work. The southwestern states, in taking such steps, would be exercising the rights and duties which are inherent in all intelligent commonwealths. The local institutions should be responsible for the archæological material excavated and under the soil within their borders and should be the agencies for its distribution.

The waste and destruction of antiquities in the Old

World is matched by the same kind of vandalism in the Southwest. There has been little veneration for the ancient places. Buildings, shrines and sanctuaries have been wrecked in the path of progress—even in the name of science. The pot hunter, both scientific and commercial, has been scouring the Southwest for fifty years. His particular field has been the burial-places and refuse heaps about the great community houses, and so industriously has this nefarious work been carried on that no archæologist of this generation has had the privilege of excavating an important site that had not been previously looted. When it is considered to what an extent vanished peoples have left their records in burial-places and refuse heaps contiguous to their dwellings the loss occasioned by the pot hunter can be understood. Along the important ten miles of the Chaco Canyon with its great central group and a large community house on each mile of the north side of the valley, not a refuse heap is to be seen that has not been dug over, and across the valley to the south where many dead are supposed to have been buried, not a mound can be found that has not been pitted over and over in search for pottery. The principal museum collections in America have been secured by purchase from unscientific collectors working in this way. The government has endeavored to establish a perpetual closed season on pot hunting but without success. Even on the lands owned and controlled by the United States the evil practise goes on.

It should be the rule that burial-places and refuse heaps shall not be touched except in connection with the excavation of the buildings to which they are related. In no other way can anything like a complete record be obtained of any ancient site. Graves are likely to contain the most important articles of ceremonial and

domestic use. Refuse heaps are, theoretically at least, composed of the waste of the town swept out from day to day, possibly for centuries, building up in consecutive layers and thus embracing in chronological arrangement, though in broken or worn-out condition, remains of every description from every age of the existence of the place.

The complete excavation of a site includes the uncovering of the buildings and the exploration of all contiguous mounds. Since the latter are likely to be so situated that some of them will be in the way of the dump from the main excavation, they must be examined first. Such mounds are usually covered with shards which call for some examination, but it must be remembered that surface finds have a very limited value. Prairie-dogs and pot hunters have so disturbed the contents of mounds that the original place of surface shards is indeterminable. The pitting of mounds, so largely employed by non-scientific excavators, is reprehensible, spoiling the mound for systematic examination and record, and serves no purpose save the occasional yield of specimens. As a means of arriving at accurate conclusions concerning the stratification of mounds, pitting is altogether misleading. A pit sunk in one part of a mound may reach the oldest deposits of the mound within a few feet of the surface, while another pit ten feet away may at the same depth penetrate only recent refuse deposits. The method is worthless and destructive. The use of short and unrelated trenches is only slightly less so.

A mound is not properly examined until its successive horizontal layers have been carefully removed, studied and recorded, with a view to disclosing its stratification, if any exists. If of a different type the mound

should be divided on both diameters by broad trenches extending through it down to native undisturbed earth. The vertical sides of the trench then present exposures which to some extent record the growth of the mound and possibly enable the observer to locate the specimens obtained with reference to their chronological deposition. It must be remembered that no mound is likely to afford a record of uninterrupted growth from its earliest to its latest deposits; that numerous other refuse heaps were in process of formation contemporaneously about the town, probably none continuously used, there being great irregularity in formation, periods of disuse and periods of excessive use; occasions of disturbance because of the extension of buildings at which times refuse may have been so handled as to cause a complete reversal of its stratification. Many other circumstances would interfere with the orderly arrangement of the material.

Since the geographical and chronological classification of pottery is being made a basis for important generalization concerning the movements of southwestern peoples and the relative dating of the ancient centers of population, it is proper to point out the extremely insecure foundation on which the structure rests. In practise, ancient technique often survives alongside modern methods. In a single community the art of one group of potters may be ascending and that of another descending at the same moment. In two adjoining towns during the same year pottery-making may be flourishing in one and dying out in the other. Again, the characteristic style of one pueblo may be engrafted upon another temporarily or permanently by the change of residence of a single individual. This will account for much of the so-called "trade pottery" found by ex-

cavation. On the whole, so many probabilities of error exist in the use of this method of study that one can not avoid the apprehension that there may be too ready an acceptance of the results by those who rely upon the researches of others. Therefore the limits of the method must be frankly stated.

When it comes to the major task of the archæologist, namely, the uncovering of entire towns, one is confronted with a multitude of problems. Chief among them are the questions of preservation and interpretation of archæological evidence. Archæology, like every other phase of history, invites conjecture and unwarranted conclusions, which, announced with an appearance of finality or made permanent by the restoration or reconstruction of buildings, can only lead to the confusion of history. The archæologist, like other historians, best serves his science by recovering, describing and preserving unaltered the evidences of human activity, calling attention to possible interpretations of the evidence, and allowing it to teach what it will. He is the observer of the mental processes of people of a different age and usually of a different race from his own. Until he can detach himself from his own time and race and attain the attitude of an impersonal spectator of activities proceeding over vast reaches of time, he will mislead by his conjectures and restorations.

The extensive literature of speculative archæology and the amount of unconvincing interpretation and reconstruction of past human achievements move one at the beginning of a new investigation to adopt a procedure that will be as free as possible from the danger of false teaching. This calls for the careful recovery and description of buried material; the laying bare of evidence for study by contemporary and later students;

the preservation of archæological remains as nearly as possible in the state in which found, with only such repair as is necessary for preservation; restoration to a very limited extent after positive verification; and for the presentation of our own conclusions, a liberal use of illustration offered subject to amendment with the accumulation of new facts. A great ruin is an object of veneration and may be a never-ending source of knowledge. A restored building is likely to be a sealed book, or, what is worse, a ghastly imitation, from which the spirit of its builders has been driven for ever.

In southwestern archæology we have the incalculable advantage of having the actual work of excavation done by Indians. They are not far removed in their culture status from the people whose productions are being recovered. Their minds run in the same racial channels. They live on the ground and in the environment from which sprang the civilization that is under investigation. They see vestiges which are hardly discernible to other than Indian eyes, for they themselves are the product of many generations of experience on this their soil. When it comes to interpretations, the philosophy of the Indian of to-day is derived from the same sources that shaped the beliefs and activities of the ancients of his own race. Indian psychology has developed through ages of life ordered to conform to the great natural forces with which the race has been so intimately in contact. These forces have been constant for ages past and the human reaction has been identical in the ancient and modern of the same race. Therefore, the Indian workman who readily becomes an observing student, is an invaluable aid in Amerian archæological research.

In this work we shall recognize three types of villages: (1) that composed of pit houses; (2) the cliff

village; (3) the pueblo proper. The first I believe to have been the earliest kind of permanent village built in the Southwest though they probably do not antedate the primitive rock shelters of many parts of the Pueblo Plateau. The pit house consisted of a rectangular or oval excavation in the ground to a depth of from two to six feet. It was sometimes walled with slabs of stone. A canopy was built over it consisting usually of four posts supporting a flat roof of poles and brush. The houses were grouped in considerable numbers, evidently to accommodate a sedentary community of considerable size. The inhabitants were prolific in pottery-making and other typical Pueblo Indian arts. Usually large pits indicate the use of the kiva. There is therefore no reason why they should not be classed as true pueblos. Pit villages were built upon flat mesa tops, such as Mesa Verde, Colorado, or level valleys, such as the Mimbres in southern New Mexico. It is the type of house that the earliest settlers, of any race, would build in such a country. Witness the semi-subterranean sod house of early white settlers on our western plains. Nothing else could equal it for coolness in a hot valley like the Mimbres. In cold weather it could be temporarily abandoned for a more comfortable domicile of another kind in a different locality; or the open sides could at any time have been quickly closed with brush and earth.

The range of these villages seems to have been coextensive with the Pueblo Plateau. A survival of the pit house is seen in the so-called lookouts in the fields of the Rio Grande Pueblos. Some of these lookouts have a second story, as the ancient pit houses may have had, used sometimes for sleeping purposes, sometimes for the storage of the harvested corn while awaiting husking. The lower story often has a fireplace and other equip-

ment for domestic life. The shelters built by the Santo Domingo Indians along the highway between Santa Fe and Albuquerque, to accommodate their pottery trade with tourists, probably gives one a fair picture of the ancient pit house. An excavation is made, approximately rectangular, from one to two feet deep. Posts in each of the four corners support a roof of brush which affords a grateful shade. Brush placed as needed around the open sides protects from winds, sand or beating rain. Even temporary fireplaces are constructed in the floors, and a trench for entrance on one side or another is soon worn, or purposely excavated.

Cliff-dwellings are of two types. The first grew from the natural rock shelters of a region such as the Pajarito Plateau, through natural stages of enlargement; extension by new excavation and by building structures of true pueblo type on the talus in front of the caves. This class is widely distributed, but its focus of greatest development is in the great tufa cliffs of the Pajarito Plateau, between the Jemez Mountains and the Rio Grande in northern New Mexico. The other type of cliff village is simply a pueblo built in a cavern. This class is also of wide extent, being found in great numbers in the San Juan Valley, the northernmost area of Pueblo remains, and in the southernmost limits of the Pueblo Plateau, the canyons and mesas of the Sierra Madre in Chihuahua. In the Mesa Verde of southwestern Colorado, cliff-dwelling life reached its culmination.

The term cliff-dwelling simply designates a certain geological location. It is made to include all those ancient dwellings of the sedentary Indians of the Southwest that are wholly or in part embraced within cliffs, against cliffs or under overhanging ledges. They are

both single- and multiple-chambered, usually in groups. The natural rock shelters and caves probably represent the oldest of all human domiciles in the Southwest.

The pueblo proper is the permanent dwelling of the village Indians, situated on mesas, in valleys or on plains, independent of support from natural rock walls. They are both ancient and modern and always multiple-chambered. There is no sharp line of definition between cliff-dwellings and pueblos. In the two classes of houses there are no structural differences. Geological environment gives name to the cliff-dwellings. A pueblo is logically a cliff-dwelling if situated against or under a cliff. Doctor Fewkes makes the fundamental difference one of dependence on or independence of natural rock walls, and the distinction seems quite adequate.

The pueblo is always a cluster of rooms or cells. There are many variations of extension and arrangement, but not of structure. The cells may be arranged irregularly or they may follow a definite alignment of common wall. They may be in one story or with superimposed stories. The orthodox form of the Rio Grande pueblo is an arrangement of four sections, or of four separate houses enclosing a quadrangle, the sections ranging from one to several stories high. While the tendency is to form quadrangles, most of them are incomplete and there are many more aberrant than orthodox examples. In the Rio Grande Valley every arrangement possible to rectangular cells is found.

The term *community house* has been used in this work to distinguish the large pueblos which were occupied by many clans, from the scattered small houses which hardly constituted villages and which antedate the great village aggregations. These small houses might be designated *clan houses.* They belong to an epoch

in the evolution of Pueblo culture anterior to the gathering of clans into large communities. Clan houses contained, as a rule, from ten to fifty rooms each and rarely exceeded one story in height. One of these dwellings was occupied by from two to a dozen families.

The many single-chambered structures scattered over the formerly arable valleys and mesas are not to be regarded as pueblos. They were used as camps or lookouts. Similar structures are still used in summer by the Tewa. The building had only a partial wall; the masonry was usually carried to a height of three to four feet; there was an open space above the half wall, closed with brush as occasion demanded, and the structure was surmounted by a brush roof. These closely resemble the pit houses above described. There are found in many places on level mesas bare outlines of rock foundations of great extent accompanied by no mounds or débris of any kind. The walls enclose rather large rectangular rooms. Good examples are to be seen on the mesas south of the Chama River. They seem very old. In a time of immaturity I called these pre-Pueblo sites. They are nothing of the sort. Much to my subsequent chagrin the term was taken up and is now one of the most abused in all southwestern nomenclature. The term, of course, should be applied to all archæological remains that antedate the pueblo.

The chronological chart of the Southwest has undergone many vicissitudes. It has been disintegrated into all the way from three (Hewett) to fourteen (Waterman) strata. For my own use the following has been found to be a fairly good working scheme. Exactness is not claimed for it. It is extremely doubtful if an absolutely reliable chronology of the Southwest can ever be established.

TIME	EPOCH	LOCALITY	HOUSES	ARTS AND INDUSTRIES
15th to 20th Centuries A. D.	Recent (Surviving) Pueblo	Rio Grande Villages Zuni Hopi	True Pueblos	Pottery Basketry Textiles Agriculture All minor Indian Arts
10th to 15th Centuries A. D.	Ancient Pueblo	Pajarito Plateau Mesa Verde Chaco Canyon Mimbres Casa Grande Chihuahua	True Pueblos Cliff-Dwellings Pit Houses	Pottery Basketry Textiles Agriculture All minor Indian Arts
1st to 10th Centuries A. D.	Pre-Pueblo	Non-sedentary and Semi-sedentary tribes	Temporary Shelters Natural Caves Rock Shelters	Beginnings of Pottery Basketry Textiles Agriculture

It is to be hoped that some one who is specializing on pre-Pueblo levels will get the business straightened out and give us a rational nomenclature, though that is of course not essential. Much more independent observation is needed by students who have not had their minds made up for them by previous investigators. It is better that the subject remain in a nebulous state than that a misleading pattern be accepted into which all evidence must be forced.

Chapter II

BETWEEN THE MOUNTAINS AND THE PLAINS

1. The Mesas and Valleys of "The Great River of the North"

The Rio Grande Valley embraces all of the Pueblo region that is on the Atlantic side of the Continental Divide. The river originates in the mountains of southern Colorado and traverses the broad San Luis Valley to the New Mexico line. The valley in Colorado has little of interest to the archæologist. The fertile flood plain of the river, after entering New Mexico, rarely exceeds ten or twelve miles in width, but with its tributaries it drains a basin one hundred and fifty to two hundred miles wide. The general trend of the valley is from north to south, swinging to the southeast below El Paso.

In the upper part of the valley in New Mexico the bed of the river is in an impassable box canyon. In making this narrow gorge the river has cut its channel through a sweeping lava flow of great thickness, a phenomenon that is repeated at White Rock Canyon, twenty miles below.

The leading geological features of the Rio Grande Valley are clear and conspicuous. The general structure of the valley varies but little throughout the course herein described. The great synclinal trough about forty miles wide lies between two imperfectly parallel mountain ranges. On the east is the Santa Fe range, a prolongation of the Sangre de Cristo chain of Colorado, embracing the highest peaks in New Mexico, some of which reach an altitude of over thirteen thousand feet. On the west is the Jemez range, made up of a number of sub-ranges and spurs locally known as the

Tierra Amarilla, the Valles, the Gallinas and the Nacimiento. These mountains are characterized by broadly rounded contours with elevated valleys between the ranges. The highest peaks are above eleven thousand feet in altitude. On the eastern slope of the Jemez range, extending almost to the Rio Grande, occur those vast sheets of yellowish volcanic tufa which because of the many natural caves therein invited the early nomad tribes to settle there and led to the development of the most characteristic ancient civilization of the Rio Grande Basin. These tufa deposits are geologically of great age. They were originally laid down as volcanic ash and are not to be confused with the basaltic flows which border them on the north and east and in some places interbed them, and which are of comparatively recent origin. The place of origin of this immense deposit of ash was the "Great Jemez Crater" in the range to the west. This enormous oval bowl, with a long diameter of eighteen miles, short diameter twelve, locally known as the "Valle Grande," is the largest volcanic crater on the globe. Its rim is made up of mountain ranges, and peaks of considerable size rise from its floor. The material ejected at the time of the eruption of this mountain many millions of years ago, built up around the crater a plateau over fifty miles in diameter, with an average thickness of one thousand five hundred feet. After that cataclysm life of every kind must have had to start all over again in this part of the Southwest. The peculiar condition into which this great volcanic blanket was dissected in subsequent ages strongly influenced the course of human history in the upper Rio Grande drainage.

The river keeps toward the western side of its trough. There is on either side of it a narrow strip of

highly productive, irrigable bottom-land, well adapted to grain, fruit growing and gardening. On the west side this strip is only a few hundred yards wide, being closely limited by the abrupt escarpments of the Pajarito Plateau which lies between the river and the foothills of the Jemez range. The main valley is on the east side. The flood plain is for the most part only a mile or two wide, in a few places broadening to ten or twelve. This is limited by the uprising of an expanse of broken country about twenty miles in width extending east to the Santa Fe range. This strip is characterized in part by naked, arenaceous bluffs, which are in places eroded into weird castellated bastions, and in part by rounded, gravel-covered hills.

The naked Tertiary sands of this valley are nonproductive, and large areas are so situated as to perpetuate this condition, but there are occasional threads of fertility along the meager water-courses, and in places the distribution of material from adjacent mountainsides has resulted in covering the bench lands with gravel and silt, which supports a fair amount of grass and other vegetation. Extensive fluviatile deposits near the river indicate at some former time a much greater river than the present Rio Grande.

At the lower end of the Espanola Valley, just below San Ildefonso, the river enters the canyon, cutting its channel through another wide-sweeping lava-flow. For a distance of two or three miles the railway follows the bank of the river down this canyon, which for the next twenty miles is passable only by an Indian trail, even this having to leave the canyon toward the lower end and pass out over the mesas. The canyon ends just above the Indian village of Cochiti. From here on the flood plain is larger, and still on the east side of the

river. The volcanic mesas still hug the river on the west, while to the east of the flood plain the areas of naked Tertiary marl are small and that of gravel and silt-covered hills and mesas of greater extent.

The method of mesa-building here seen points to a former climatic condition radically different from that which now prevails. The sudden, heavy downpour of rain, now characteristic of this region, sweeps large quantities of gravel and silt from the mountainsides into the gulches and on into the rivers, creating a formidable obstacle to irrigation projects because of the rapid filling up of reservoirs. It does not permit of uniform distribution of the soil from the mountainsides over the lower mesa and bench lands. A humid climate, characterized by much rainfall, occurring in steady, long continued showers, would cause a constant, gradual degradation of higher slopes and redistribution of the material upon the lower bench lands in the uniform manner here seen. Furthermore, the Rio Grande, as previously mentioned, and many smaller streams, show evidences of a volume formerly much greater than at present.

The climate of the Southwest has probably been at some time similar to that of the Gulf States. There is no reason for believing that any great physical catastrophe occurred to change this, but rather, it appears that the country has undergone a slow progressive desiccation, extending over a long period of time. That the epoch of human occupation extends back into this period of greater humidity is possible. Agriculture without irrigation has flourished over considerable areas on the Pajarito Plateau that are now non-productive from lack of water. That plateau has anciently supported a large agricultural population where now it sup-

ports none. On areas like Mesa del Pajarito, where the aggradation of a hundred years under present climatic conditions would be almost imperceptible, where, in fact, no distribution of soil from higher levels is now going on, there has been an amount of upbuilding of the general mesa level about the walls of ancient buildings that is not explicable under climatic conditions now existing. The structures here referred to are not the large community houses but are of an older, scattered "small-house" type, the antecessor of the many-chambered pueblo. The age to which we would have to return to find a climatic condition so radically different from the present is a subject on which we have as yet no light.

There have frequently come into my hands specimens of charred corn embedded in so-called lava from sites in the Rio Grande drainage. Analyses of the specimens have always disclosed the fact that the material bears no chemical relation to basalt, but is an acid product produced accidentally by the action of fire upon ordinary adobe soil. The specimens present superficially the appearance of true lava. The burning down of an adobe house in which corn is stored would produce this result. There is as yet no evidence that there was human occupation anterior to or contemporaneous with the New Mexico lava-flows, though these are of recent occurrence, geologically, not over eight thousand to ten thousand years old.

The principal eastern tributaries of the Rio Grande are the Pecos, a large river, and Taos, Santa Cruz, Pojoaque, Santa Fe, and Galisteo Creeks, small streams with narrow flood plains, which usually carry a small amount of water to the confluence during a considerable part of the year. On the west there is one large

tributary, the Rio Chama. The Santa Clara, Guages, Pajarito, Bravo, Rito de los Frijoles, Alamo, Cañada de la Cuesta Colorado and Cañada de Cochiti are small creeks perennial in their upper courses, but none of them carrying their water to the Rio Grande except in flood seasons.

Meteorological conditions throughout this region are peculiarly definite. There is a high per cent. of cloudless weather, rare transparent atmosphere, light precipitation, excessive evaporation, low humidity, considerable wind, especially in the spring. Vegetation dries up rather than rots. Meat cures in the open air without salt. In the lower valleys the total precipitation ranges from ten to fifteen inches annually. In higher altitudes this is increased to from fifteen to twenty inches, with a considerable amount of snow. Precipitation is unequally distributed throughout the year. Heavy rainfalls of from a few hours to some days' duration are followed by months devoid of moisture. The range of temperature is considerable, owing to the great range of altitude. The nights are invariably cool both in winter and summer. There is little zero weather in winter except in the high altitudes, and no oppressive days in summer even in the lower valleys. This is not due to absence of heat, for at midday there may be a scorching temperature, but to lack of humidity. Sultry days are unknown. The growing season varies in length with the altitude, but is rather short at best. Small grain does well even in the highest valleys, while fruit-growing is limited to the altitude below seven thousand feet. Various grasses flourish up to the highest altitudes. Corn matures in the valleys and on the mesas up to eight thousand feet.

The country bears but few natural-food products.

A few berries, wild cherries and plums are found in the canyons and are used by the Indians. There is some scrub oak, the acorns of which would furnish an appreciable amount of food. The most abundant food of this class is the seed of the piñon (Pinus edulis), which is used by the Indians who, however, care less for it than the Mexicans do. Fish are not plentiful. Some trout are found in the mountain streams, but the Pueblo Indians fish only a little. The country is rather poor in game, but the Indians have always been able to secure some deer, bear and wild turkeys. There is a rich insect fauna. Swarms of butterflies are to be seen throughout the summer. There are many lizards, tarantulas and centipedes. Rattlesnakes appear on the mesas and in the Rio Grande Valley. Bats frequent the crevices in the cliffs. Occasionally locusts appear in great numbers and these are used by the Indians for food.

Such is the country and its natural resources lying between the Continental Divide and the great plains, drained by the Rio Grande del Norte, which the Pueblo Indians occupied and made their own.

The Rio Grande drainage embraces the most easterly remains of the Pueblo culture, if we except a few inconspicuous ruins in western Kansas and certain others that have been reported from the Panhandle of Texas. It may be regarded as the eastern frontier of the Pueblo area. East of the Pecos are the unbroken grassy plains, the great cattle range of recent years and in earlier times the feeding ground of enormous herds of buffalo. This animal afforded the principal food supply of the plains Indians. It was an unstable source of subsistence and led to a correspondingly mobile population. The character of the Rio Grande country was such as to encourage a sedentary mode of life. The

coercive influences of the physiographic conditions above described would be first seen in the adoption of an agricultural basis of food supply, made necessary because of the insufficiency of game and wild fruits. A correlative result would be the selection of sites adapted to agriculture and the preparation of ground for cultivation. This would lead to the adoption of permanent abodes and substantial house-building and these would naturally be located with reference to safety and water.

The ruins in the valley proper belong to a late period. In the hills and on the high plateaus near the base of the mountains are found the oldest ruins. This repeats the condition to be seen along the great waterways of the Old World, such as the Tigris, Euphrates and Nile. Primitive man usually sought the foot-hills where rock shelters were plentiful, and where if irrigation was necessary at all it could be had by diverting small streams. Irrigation from large rivers called for engineering skill that came with rather advanced civilization.

The greatest focus of ancient population in the Rio Grande drainage was on the plateau around the Great Jemez Crater, especially that on the east side, known as the Pajarito Plateau. This culture will be described in detail and for special study we will select the ruined towns of the Rito de los Frijoles and the Puyé, two districts where our own excavations have been going on for several years. Likewise, the ruins of the Jemez Valley where we have made extensive excavations in the region called by the Indians "the Place of the Boiling Waters" will be described; thus giving a view of the ancient life on two sides of the Great Crater, the eastern and western divisions of the volcanic plateau.

The frontier strongholds, Pecos and Gran Quivira,

east of the Rio Grande toward the great plains, are points of dramatic history. For the reconstruction of these we have the evidence of tradition, of documentary history and of excavation. With the study of these, added to that of the plateau sites, the ancient life of the Rio Grande Basin should be well restored.

2. The Pajaritan Culture

In proposing the name which is now generally accepted for the plateau lying between the Jemez Mountains and the Rio Grande and extending from the Chama Valley to Cañada de Cochiti, I chose the central geographical feature of the area, *i. e.,* the Pajarito Canyon (Spanish *pajarito,* a little bird, a sparrow). The Tewa name, Tchirege (Place of the Bird People), is applied to a large ruin on the northern rim of this canyon in which, as well as in the neighboring villages, I have made considerable excavations. These investigations made known a new region and a culture for which a specific term seems necessary; hence the designation, Pajaritan culture.

It will suffice for the moment to state three principal reasons for qualifying the theory that the Tewa of the Rio Grande Valley are in entirety descendants of the ancient cliff-dwellers of the adjacent plateau. 1. There is general non-conformity between modern Tewa pottery and ancient Pajaritan ware. 2. There is nonconformity of physical type, the Pajaritans having been a homogeneous people while the Tewa, and all other Pueblos, are noticeably composite, predominantly brachycephalic. 3. Tewa tradition, when thoroughly sifted, does not support the hypothesis of complete identity. These facts have seemed to me of sufficient importance to warrant the tentative establishment of a

culture which, from the plateau overspreading it, I have named the Pajaritan.

The archæological remains of this culture are distributed over almost the whole of the Pajarito Plateau. There were three principal foci of population, the Puyé, the Pajarito and the Rito de los Frijoles. The ethnic relationship of these groups is not established, but characteristics that persist throughout indicate relationship as close as that existing between the Tewa villages of San Juan, Santa Clara and San Ildefonso, though it does not necessarily follow that the same language was spoken in all these settlements. It seems fairly certain that the Keresan language was spoken in the Rito. These groups afford exceptional facilities for the study of the development of culture through a long period of time. The geographical isolation and duration of occupation were such as to induce definite, homogeneous development. This shows in both the physical type and the cultural remains. In the arts of the Pajaritans we may read several centuries of their history. It is entirely pre-Spanish, the excavations having never yielded a vestige of European influence, and so distinctly does it reflect the civilization in which it was produced that a specimen of pottery from this region is as unmistakable as is anything Greek, Etruscan or Egyptian.

It would seem that some ancient culture wave, traversing the Rio Grande Valley in remote times, must have thrown off detachments which lodged in the canyons of this plateau. The cause of the unique localization of these bands is not at first thought clear. It is unlikely that motives of defense entirely controlled the choice, for much evidence tends to show that the modern predatory tribes, Navaho, Apache and Ute, arrived in the Southwest in comparatively recent times. The con-

struction of the great defensive community houses of the Pajaritans belongs to the latest epoch of their history. For a long period they were dispersed over the plateau. This was the epoch of the small houses, of which several thousand have been counted. There is both archæological and physiographic evidence that the earliest inhabitants arrived at a time when climatic conditions were radically different from those of the present. The proof of progressive desiccation of the Southwest is abundant. The Pajarito Plateau has lain uninhabited for some centuries because of the scarcity of water that could be conserved for irrigation. The great communities, representing the last stages of habitation, clustered about the gradually failing springs. The earlier small-house communities were found everywhere, indicating a climatic condition favorable to agriculture. It would appear that the reason for settlement of the plateau by the early bands was that in those times the now desiccated table-land afforded more favorable conditions for subsistence than the adjacent valley of the Rio Grande; a condition now reversed. This diffusion of population would imply a social organization somewhat different from that existing among the people of the later communities where the system was the prototype of the modern pueblo. In the ruins of the dispersed small-house villages there are to be detected the basic principles of community structure that prevail in Pueblo organization to-day. There may have been lacking the element of dual organization, a social phenomenon that probably originated with the coming together of numerous clans into large communities. This fact of genetic aggregation survives among the modern Pueblos. In the small-house communities the group unit must have been the clan in which the basic social fact is the matriarchal

system, by virtue of which domestic authority resides in the mother. The fundamental fact of the religious order in the modern Pueblos is the dual hierarchy, by virtue of which the sacerdotal authority is lodged in two priests, the *Summer cacique* and the *Winter cacique,* who have charge of the ceremonials of their respective seasons. This would have developed along with community aggregation. But that the basic elements of it existed in the small-house communities is indicated in the house remains. The structural germ of every community house was the kiva, the circular subterranean room that is found in conjunction with all community houses, small and great, of the Rio Grande and San Juan Valleys. This was the clan sanctuary, the place set aside for prayer and religious ceremony.

No other object in southwestern archæology is of greater interest than these subterranean sanctuaries. Everywhere we find the kiva as the nucleus of the settlement. In the San Juan region the circular underground kiva is conspicuous in every ruin group even of only two or three rooms. All evidences point to the kiva as the germ of every pueblo. It would seem that the first act of the clan was to locate its sanctuary and around it build the living-rooms. In the small community houses of the Pajarito Plateau we find always the kiva. With the formation of the great communities a new feature probably developed, namely, that dual hierarchy, and with this the dual kiva system, a common sanctuary for each division of the tribe. In it was centered all that was vital to the life and happiness of the people. It was the place of silence, the sanctuary to which those charged with sacerdotal functions retired for thought, for prayer, for offering, for sacrifice. It was the place of secret religious rites and preparation for public cere-

monials. In gathering about the sipapu, men approached the Earth Mother; they sought the sources of ancient wisdom; they were at the portal whence life emerged. I quote here statements of Pueblo priests according to whom it is not quite correct to speak of the sipapu as symbolizing the entrance to the underworld. In the kiva of the Rio Grande clans and in the observances clustering about it, we have symbolized the Pueblo conception of the origin of life and the ordering of human conduct.

In modern Pueblo organization the clan kiva has almost disappeared. It survives at Taos, but at San Juan, Santa Clara, San Ildefonso, Nambe and Cochiti only tribal kivas remain. There is the kiva of the *Summer people* and the kiva of the *Winter people.* In some cases these are semi-subterranean, in others wholly above ground. The ancient kivas are entirely subterranean.

In connection with the uses of the kiva among the Pueblos, it is interesting to note the following parallel in Pawnee ritual. I quote from Alice Fletcher's study of the Hako.

"The first stanza of the second part calls the people to give heed to Ku-sha-ru, a place set apart for sacred purposes. Concerning Ku-sha-ru, the old priest said: 'The first act of man must be to set apart a place that can be made holy and be consecrated to Ti-ra-wa, a place where a man can be quiet and think about the mighty unseen power.'

"The first stanza of the first part made mention of A-wa-hok-shu, the holy place, the abode of Ti-ra-wa, whence life was given to man through the intermediary powers. The first stanza of the second part directs that man should set apart a holy place, where his thoughts could ascend to the life-giving Ti-ra-wa.

"The old priest further explained: 'We are taught that before a man can build a dwelling, he must select a place and make it sacred, and then about that consecrated spot he can erect a dwelling where his family can live peacefully. Ku-sha-ru represents the place where a man can seek the powers and where the powers can come near to him.'"

There is to be noted here a most significant similarity between the Pueblo kiva as the essential nucleus of a settlement and the sacred place of the Pawnee.

The arts of the people of the plateau were those of practically all the ancient sedentary tribes of the Southwest. Their highest attainment was in pottery-making, and in this their only unusual achievement was in the use of glazing in ornamentation. They discovered the art of glazing and used it with fine effect in decoration. In most of the red and brown ware found at Puyé, Otowi and Tyuonyi the black lines were covered with a vitreous coating which analysis by Dr. Wirt Tassin, of the United States National Museum, proved to be a true glaze. It was used solely for decorative effects, and while usually applied over black lines, giving the peculiar under-glaze results, the material was, doubtless intentionally, caused to spread over large areas, producing striking effects, especially when by reason of some mineral element in the clay, rich iridescent hues occurred. But one specimen has been found, a small prayer meal bowl at Puyé, in which an entire surface was glazed, perhaps accidentally.

The process of glazing as practised by the Pajaritans was probably very simple. One can not say what it actually was, but what it could have been is clear. After the vessel had been decorated and fired in the usual manner, a saturated solution of salt water laid on over the

ornament and the vessel again fired under as great a degree of heat as they were able to produce in their primitive kiln, would have produced the essential conditions for glazing. The sodium of the solution combining with the silica of the clay would produce over the design, and over all surfaces on which the solution spread, a transparent glaze which could never scale or peel off without taking with it the clay of the vessel itself to the full depth to which the salt water had penetrated. The spreading of the solution and the occurrence of oxides in the clay could have produced the accidental effects, particularly the rich iridescent tints found on the pottery at Puyé and Tyuonyi.

Glazing was practised to some extent in the valley of the Little Colorado. The art may have been carried there in migrations from the Rio Grande drainage. It is of quite inferior order. In fact, nowhere else on the American continent was glazing so well handled as in the Pajarito region. It was long held, and may be so still by some American archæologists, that the art of glazing was not indigenous to America and that wherever found it is an indication of European influence. It has been called the "Spanish glaze." But it was practised on the plateau west of the Rio Grande long prior to the advent of the Spaniards, and ceased to be practised during the upheaval that occurred soon after the coming of the conquerors. The art is unknown to the modern Pueblos, is never seen in the specimens of pottery, sacred vessels and heirlooms that have been handed down among them for generations, and is not found in modern refuse heaps. On the other hand, it occurs in all the ruins of the Jemez Plateau, where no vestige of European influence has ever been found—sites which if occupied at the time of the conquest could

not have escaped mention in the ecclesiastical records. It may be safely affirmed that decorative glazing was an indigenous American art, and I am inclined to consider the plateaus of the Rio Grande drainage as the place of its origin.

Ornament in Pajaritan pottery is largely conventional. Very few pictorial designs are found. Life forms are extremely rare except as embodied in highly conventionalized patterns. A study of many examples of the excavated pottery of Pajarito Plateau discloses the fact that the most prevalent motive in Pajaritan decoration was the Awanyu. It is an emblem of great potency. Awanyu was the water serpent, guardian of springs and streams, the preserver of life; for without water, crops, food, life must fail. Many variants of this symbol are to be seen.

The history of the last epoch of the occupation of this plateau is a story of struggle against failing nature. Subsistence became more and more uncertain; life more and more precarious. This was a condition favorable to the development of ritual and symbolism. So we find this idea constantly reflected in the symbolic ornamentation of food bowls and water-jars; Awanyu, emblem of mythic power, represented by the great prayer plumes, or the circuit in which the power habitually moved, or the great band across the concavity of the vessel—the Sky-Path of the mighty power. In Tewa tradition there is the belief that Awanyu "threw himself across the sky." The origin of the Milky Way is thus accounted for.

I give these fragments of ancient Pajaritan mythology, with their application to the system of design that prevails on the pottery, exactly as it was given by Weyima, rain priest of San Ildefonso, in his time

the most highly respected man of the village. Time has fully confirmed his reliability as an informant. His identification of the system of bird symbolism was equally illuminating and is not questioned. This symbolism occurs in endless variations, all so highly conventionalized as to have lost all pictorial quality. It is safe to say that ninety per cent. of all Pajaritan pottery design derives from the two motives, bird and reptile. This is probably the most significant fact in Pueblo art and religion, both ancient and modern.

The ancient cycle of Pajaritan myths is broken down, and mere fragments can be recovered from the old men of the different villages. It has been submerged by the mythology of a more recent epoch, but the Awanyu symbolism as explained by Weyima I have heard confirmed repeatedly by Indians from various pueblos on looking at the specimens in the Museum. The dominant religious symbol of the modern Pueblos, seen on their prayer meal bowls and etched upon the rocks, is the plumed serpent, called by them Awanyu. It is represented as a flying reptile with plumes on head and body, pictured as moving through the air and often drawn with great vigor. It is a symbol that is widely distributed over the American continent. Nowhere else has it been used with such remarkable effect as a decorative motive as upon the pre-Aztecan temples in Mexico. In this connection a myth of the Tlauicas, inhabiting the Cuernavaca Valley, with reference to a mythic power, represented in serpent form and now seen in the Milky Way, is significant. It can hardly be doubted that this combination of bird and serpent, emblematic of deific power of sky and earth, called Awanyu by the Pueblos, is the Quetzalcoatl of Aztec mythology (Nahua: *Quetzal,* a tropical bird; *coatl,* reptile).

The most convincing testimony on the subject of the non-identity of the Pajaritans with the modern Pueblos is that of their physical characters. The skeletal remains that have been collected, in one case as many as one hundred twenty-five subjects from a single burial-place, have been examined by Doctor Hrdlicka, and in a preliminary statement he pronounces the ancient Pajaritan people to have been of rather inferior muscular development, a homogeneous people, unmixed in physical characteristics. On the same authority modern Pueblos are predominantly a composite people. This non-conformity of physical type seems opposed to the hypothesis of identity between the ancient cliff-dwelling people of this region, whom I have called the Pajaritans, and the modern Pueblos. It simply means that with the exodus from the cliffs into the valley there came a mingling with other clans.

The evidence on which the hypothesis of exact identity was based was that of the Pueblo Indians themselves. The Keres of Cochiti have always claimed the Rito de los Frijoles as one of their ancestral homes, and the Tewa of Santa Clara have in like manner laid claim to the ruined towns of Puyé. The claim of the latter village was taken up for thorough examination. For over a quarter of a century these Indians stoutly claimed the cliff-dwellings and community houses of Puyé as the homes of their ancestors. During this period the Pueblo of Santa Clara had pending in the courts a claim against the government of the United States for a large tract of land, about ninety thousand acres, lying west of their grant and extending to the top of the Jemez Mountain range. The basis of the claim was an alleged Spanish grant, and in support of such documentary proof as could be adduced, their ancient homes scattered

over the plateau, particularly the Puyé villages, were pointed out.

This tradition came to be believed in good faith by the majority of the Santa Clara people. It was a stock argument in pointing out the injustice of the court in granting them a strip of less than five hundred acres along Santa Clara Creek in lieu of the large tract claimed by them. This case was finally settled by setting aside the original claim and granting in lieu thereof a new reservation embracing something near half of the tract originally claimed. Since the favorable issue of their suit, the old men of Santa Clara are changing their attitude. In a council held with their head men in August, 1907, to consider their opposition to my excavations at Puyé, what I believe to be the exact truth of the matter came out. They do not contend that their people, in their present organization as a village group, were the original builders of the cliff-dwellings and community houses of Puyé. They hold consistently to the tradition of a reoccupation of the cliff-houses and of some rooms in the great community house by the Santa Clara people during the troubled times of the Spanish invasion. It is possible that after the Pueblo rebellion of 1860 some Santa Clara families lived for a while in the cliff-houses. This could have been but a temporary and limited occupation. The acculturation resulting from contact with European civilization could hardly have failed to manifest itself by that time in their utensils and in decorative motifs. The excavations at Puyé have as yet yielded no vestige of such influence.

It is certainly true that some clans in almost every modern Pueblo village trace their origin to the people of the cliffs in a consistent line. This would account for

the composite type formed by the amalgamation of people from the cliffs with bands from out-lying regions.

EL RITO DE LOS FRIJOLES

Of all the beautiful and romantic spots in the Southwest none surpasses the Rito de los Frijoles. The part of it of especial interest to us is the lower five miles of its course. The flood plain in the bottom of the canyon nowhere exceeds an eighth of a mile in width. The little streamlet which issues from the Jemez Mountains ten miles above carries its waters during the entire year to the Rio Grande. It is never-failing. It has endured for ages through the progressive desiccation of the Southwest, leaving the valley of the Rito one of the few spots still habitable in a region long since depopulated because of the failure of water. The former populous condition of this plateau is attested by the myriad remains of cliff-houses and ancient pueblos that occupy every valley and mesa top from the Chama River to the Cochiti and between the Jemez Mountains and the Rio Grande.

The northern wall of the canyon of the Rito is a vertical escarpment of from two hundred to three hundred feet high, rising above a sloping talus. The southern wall has a more gentle slope, is lightly timbered, and nowhere presents the long, continuous, vertical escarpments seen on the northern wall.

The ancient remains in the Rito consist of four community houses in the valley and one on the mesa rim near the southern brink of the canyon, and a series of cliff-houses extending for a distance of a mile and a quarter along the base of the northern wall. These cliff-houses are of the type sometimes known as "cavate lodges." The term is one that should be rejected. The

excavated cliff-house is as much a true cliff-dwelling as is the pueblo built in the natural cave. The true character of the so-called cavate lodge has not been fully understood. Some of these excavated rooms have been used as domiciles independently of any construction upon the talus against the cliff, but through the entire Pajarito region where this type of cliff-dwelling culture reached its culmination the excavated rooms were not generally used as independent domiciles. They served more often as back rooms of the houses built upon the sloping talus against the cliff wall. In the Rito de los Frijoles eleven of these talus villages were identified and sufficient excavation done to lay bare foundation walls showing the existence of houses of from two to four terraces built against the cliff. Nowhere else are these talus pueblos so well preserved as in the Rito. Here we see not only the rows of holes in which rested the floor and ceiling timbers of the buildings, but in many cases the plaster is still upon the rock which forms the back wall of the house in front. Of the eleven talus pueblos in the Rito de los Frijoles some contained fifty to seventy-five rooms. The largest was a continuous house from one to four stories high and extending along the cliff for a distance of seven hundred feet.

Very little excavating has been done in the talus pueblos. The uncovering of all these ancient villages would be a work of great interest and extend over many seasons. Whether each separate village represents the abode of a single clan, or whether their separation is merely dependent upon the structure of the cliff, has not been determined.

The principal focus of population in El Rito de los Frijoles was the great community house of Tyuonyi. This was a terraced structure, roughly circular in form.

It was built of blocks of the volcanic tufa and the amount of débris indicates that it was a three-story pueblo. Unlike the majority of the large community houses of the region this building is somewhat regular in construction. As a rule, the buildings seem to have grown by gradual accretions, single rooms or suites having been added to meet the needs of increasing families. Here there is absence of this irregularity of plan, as though the entire building had been designed and executed at once. The curving walls are not produced by simply changing the direction of the wall from room to room. The walls form curved lines. The thinnest part of the structure was on the southwest where there is a flattening in the roughly circular plan due to the nearness of the creek. The building is not so well constructed as others that have been excavated in the Pajarito region, *e.g.*, those at Puyé and Tchirege. The walls are lighter, the stone not so well prepared, not so well laid nor so well plastered. Neither is the flooring so firmly made.

The form of the building was well calculated for defense. The living-rooms were entered from the inner court by means of ladders ascending to the roofs and then through hatchways and by ladders descending into the interior. The court was entered by a single passageway on the east side. This has been cleared. It is of irregular width, varying from six to seven feet, the side walls covered with adobe plaster and the east or outer end provided with a double system of barricades. Posts were planted across the passage at short intervals and outside of this was a stone wall partially closed, which could be made to close the entrance completely.

The trenches produced in every direction from the center toward the inner wall show an accumulation of soil in the court since the abandonment of the building

of from two to six feet in depth, the greatest accumulation being against the wall at the southeastern part. Study of the environment reveals no means by which the soil could have been laid down except by atmospheric deposit. The situation is not exposed to drifting desert sands, being in a deep, sheltered, verdant canyon which lies between lightly timbered grassy mesas.

One of the most interesting features of the archæological remains is the kiva. Three of these ceremonial rooms are found within the court of the pueblo. A few rods below the community house was found the largest kiva that has been discovered in the ruins of the Rio Grande Valley. It has long passed for a reservoir. Excavation lays bare a circular room forty-two feet in diameter. It is lined with a double wall of tufa blocks. On the floor near the east side is the fire pit or sipapu. Four columns supported the roof of the kiva. The entrance was through a trap-door in the roof. If there was an altar it probably occupied a place on the floor between the sipapu and the wall back of the fire pit, and was doubtless built in terraced form of stone and adobe, three or four feet wide, about a foot thick and rising to a height of three or four feet. This conjecture concerning the arrangement of the altar is based upon what is to be seen in similar sanctuaries now in use in surviving pueblos of the Rio Grande Valley.

In the wall adjacent to the fire pit is a horizontal tunnel forming a passageway from the kiva to a vertical shaft a short distance outside the kiva walls. This tunnel is something over two feet wide, its floor a few inches above the floor of the kiva and its roof which was probably of wood, nearly four feet above the floor. On each side of the entrance was a stone post, and above, a heavy lintel of stone. The shaft itself was not large enough to

permit of its being a practicable entrance, though the tunnel is of ample size. In the kiva here described two such entrances exist, one on the east and one on the west side. In no other kiva has more than one such entrance been found. The function of this feature has not been positively determined. It is common to all ancient kivas in the Rio Grande and San Juan Valleys, but does not exist in the kivas of the modern towns. It is what Dr. J. Walter Fewkes, in his report on the excavation of Spruce Tree House in Colorado, describes as a device for the ventilation of the kiva.

I am not prepared to accept this determination. For the present I prefer to call this the "ceremonial entrance." Whatever may have been its function it was doubtless the same throughout the Pueblo region. An examination of over one hundred examples in southern Utah, Colorado, the Chaco Canyon, New Mexico and the Rio Grande drainage, shows that while this appurtenance of the kiva varied greatly in form and construction the same principle prevailed throughout. In Utah two sticks are usually found in the shaft, crossed at right angles.

In the Rito de los Frijoles, kivas are found in three situations: *viz.,* contiguous to the pueblos in the valley bottom, sunk in the talus in front of the cliff villages, and excavated in the walls of the cliff. It seems likely that each group or village possessed its own kiva.

Another interesting feature of the archæology of El Rito de los Frijoles is the ceremonial cave, situated high in the face of the cliff just opposite the upper pueblo. This cave is entered with considerable difficulty, all vestiges of its ancient entrance having disappeared. The cave has contained several rooms built against the wall and back of these were excavated chambers. In

the bottom of the cave was a kiva in the rock floor. This we cleared of its débris. It contained numerous interesting articles well preserved because of their protection from the weather. Specimens of matting were taken from the kiva in an almost perfect state of preservation; also perfectly preserved grains of red corn were found.

The cave is one hundred and fifty feet above the water of the creek. It has been made accessible by the building of about ninety feet of ladders and two hundred feet of rock trail and stairways.

The buildings which formerly occupied the cavern are entirely destroyed but their foundations are still to be traced, as is also the imprint of their walls upon the roof of the cave. They were of stone, some one and even two stories high, with excavated chambers at the back. The roof of the cave formed the roof of the second story. The plan as worked out gives a total of twenty-two rooms.

This is one of the few ceremonial caves that have been found in this region. One long known is "La Cueva Pinteda" (The Painted Cave), in the northern wall of the Cañada de la Cuesta Colorada. This cave has its walls covered with pictographs painted in red, white and black. The ceremonial cave at the Rito has some features in common with the Painted Cave but contains no wall paintings.

The problem of how the people of the Rito disposed of their dead is an obscure one. It is stated by Bandelier, in the *Delight Makers,* that cremation was practised. It is probable that this belief was based upon the traditions of the Cochiti Indians with reference to the custom among their ancestors. Exploratory trenches carried in every direction about the great community house of Tyuonyi reveal no general community burial-

place such as we expect to find in close proximity to every large stone pueblo. Toward the end of our first excavating season, when we had almost decided to accept the cremation theory, a series of trenches through the talus in front of the cliff villages about two-thirds of the way down to the flood plain, and carried parallel to the cliff wall, disclosed a number of burials. It now seems likely that talus burial was the prevailing mode. All the skeletons found were buried separately in the talus slopes and not accompanied by pottery or other utensils.

Some excavations were made in the ruins of the small pueblos in the valley bottom below the great community house, and thirty-five rooms were cleared in the ruin of the canyon rim south of the Rito. In addition to the excavations made at the Tyuonyi settlements during the season, several rods of trenches were run about the "Pueblo of the Stone Lions" on the Potrero de las Vacas about six miles in direct distance to the south, and a number of rooms were excavated. This site is known on account of the "Shrine of Mokotch" found near by. It consists of a stone stockade enclosing the effigies of a pair of pumas, or mountain lions, which lie extended at full length side by side, carved in high relief from a large tufa boulder.

Later excavations in the Rito were in the talus houses, on the slope just north of the great community house. This group consists of two distinct villages. The first occupies the eastern section and lies at a lower level than the western part. It is reached by a trail which passes up a ravine to a landing at the west end of the terrace on which the house was built. From the same landing a stairway trail to the left leads up to higher levels, back of the group of conical rocks known as

"The Needles," to the second village group excavated and named the "Snake House."

The Sun House was so named on account of the prevalence of sun symbols on the face of the cliff above it. This symbol consists usually of an etching of concentric circles and in most cases is painted red. The roughly crescent-shaped terrace on which the house stood is one hundred and fifty feet long; its width varies from ten to fifty feet. The western half of the terrace is only wide enough for a walk in front of the house, but the eastern half widens to a broader ledge which formed a small plaza. This plaza terrace is about four feet higher than the level of the walk. Both terraces are supported by retaining walls of tufa blocks.

Previous to excavation, no house walls were visible above the talus. This is one of the problems of the talus towns. The condition of ruins in the valley, or on the open mesas, is easily explained. Houses several stories high may crumble to the earth, and the natural drift of soil, atmospheric deposit, climatic action and the advance of vegetation, convert the site in the course of a few centuries to grass-grown mounds. With the talus houses, there is the shelter of the cliff rising in some cases hundreds of feet above the ruins. In some instances there have been slides of heavy rock masses from above, detached by natural weathering, or perhaps seismic disturbances, to cover the buildings. But usually the mass which constitutes the talus ruins consists of only the débris of their own walls, covered with the detritus of the cliffs, and atmospheric deposits, varying with the situation of the ruin. There is too a considerable wash of soil from the talus slopes, tending to keep down the accumulation. Yet buildings from one to four stories high have crumbled into the talus and have been

so smoothed off that all appearance of ruined walls is wanting until laid bare by the spade. While these are conditions that do not afford any accurate basis for estimate, they must be given some weight in any study of the time element.

The Sun House is the smallest of the talus villages that have been cleared. Before excavation, eleven cave rooms were visible at varying levels. These were for the most part back chambers of the house built against the cliff. They were nearly all on second- or third-floor levels.

We have here excavated a total of twenty-eight rooms, exclusive of small alcoves and niches. The original number of exterior rooms can not be determined. Owing to the irregularity of the cliff, the complete plan of construction can not be traced. It would be safe to estimate that the Sun House when occupied comprised from forty to fifty rooms of all classes.

Some of the rooms have the usual appurtenances of domestic life, such as fireplaces, niches and storage alcoves. The cultural remains consist of articles of stone, bone, wood and clay. We have here an interesting assemblage of rooms: at the bottom, a kiva, adequate only for the use of a small clan; above, an open room, the clearing of which yielded objects of ceremonial character including some fine specimens of ringing stones which, when tapped, give out a clear metallic sound that can be heard at a long distance. These, suspended from the roof by strings of deer-skin, were used by the priest to call the men to the kiva. I found this device in use in one of the kivas at Taos. Above this open room, the living quarters completed the dwelling, which, from the ceremonial material found there, I have considered to be the house of a rain priest.

From the landing at the base of the cliff from which the stairway turns to the right to ascend to the Sun House, another stairway turns up to the left to the western section, which, after clearing, we named the Village of the Snake People. The cliff is so irregular that no plan of the village is possible. The line where the talus meets the wall rises steeply from the common landing between the two villages, with ruins of cave houses all along, until the apex is reached. The chambers at the top are at least sixty feet higher than those nearest the landing. From here the slope breaks away precipitously to the left for a distance of about two hundred feet, which can be passed only by means of long ladders and stone stairways. No cave rooms exist along this line of cliff base, but the foot of the trail terminates at a landing about eighty feet lower down, directly in front of the largest cave kiva that has been found. This is not now considered a part of the Snake House group, and will be described separately.

The slope from the Snake House to the valley is so broken and precipitous that almost no talus exists there. Only at one point is there any ledge upon which rooms could be built exterior to the cliff. Here were outside rooms partly cut from the rock and in part built with artificial walls. There is room only for a rock stairway leading to the upper section. Such is the ruggedness that only open porches could have been built in front of the cliff chambers at this level. The slope has been sculptured by wind erosion into a grotesque group of cones and cylinders.

The upper section of the group is interesting mainly for its unique situation. The lower section affords much more that is instructive. The central feature of the group is the Snake kiva. This is of the class that we

have named "cave kivas," having been enclosed entirely within the walls of the cliff. A considerable part of the front has fallen away. Vestiges remain of the main entrance, which was at about the center of the southern side. To the right of this are to be seen traces of the ceremonial opening which exists in all the ancient kivas of the Pajarito Plateau. The shape of the room is that of an irregular oblong. Upon the floor is a row of holes, a feature found in the floor of nearly every kiva in this region. These holes vary from three to five inches in diameter and from six to twelve inches in depth. They are placed in a straight line at a distance apart, averaging about twelve inches. The number is always six or seven. In this kiva there is a single row. In a number of others there are two rows forming an angle the degree of which is variable. In a number of cases these have been found partially filled with adobe mortar. In some this filling was found intact, and set into it deeply and firmly was a loop of willow or other tough flexible wood. The loops extend a little above the surface of the floor. The Indians identify this as the place where the loom was fastened when suspended from the ceiling above. We are told that all the weaving of ceremonial paraphernalia was done in the kivas. Another hole, isolated from those in the rows, is found in the floor of nearly every kiva. In this a post was set. It always occupies a certain position with reference to the ceremonial opening in the kiva wall through which the sun's rays, entering and falling upon the post, produced a shadow which served to mark divisions of time. The use of this sun mark in the kiva can not be explained in detail. That it had such a function I was informed by Indians at Santa Clara.

The walls of the kiva are covered with a dense coat-

ing of smoke which partially obscured the mural decorations. A dado painted in red to a height of about forty inches extends around the interior wall. Above this is a frieze about twelve inches wide in which there is to be seen a painting of the "Plumed Serpent," which is the feature from which this kiva has been named. The painting is now so thoroughly blackened that its original color can not be ascertained.

There are other features which aid in the identification of this as a Snake kiva. Small etchings of the Plumed Serpent are found under the successive washings of color upon the wall. In the alcove just to the right of the kiva, a deposit of ceremonial objects was found. Among the specimens are fragments of the framework upon which was constructed the "Magic Snake" used by the priests in connection with certain occult ceremonies, as at present among the Hopi. From the evidences found we conclude that in the group of rooms adjacent was the dwelling of the priest who had charge of the rites of the sanctuary.

Some distance above and to the left of the kiva, in a small alcove, was found the best specimen that has been recovered illustrating the mode of burial here practised. On the floor of the cave, covered to a depth of about two feet in the volcanic ash, was found the desiccated remains of an individual that had about reached the age of maturity. The body was placed upon the face, with the head to the west, and folded in the "embryonic position"; that is, with the knees drawn up against the chest in the position of birth. The skeleton was completely articulated. The body was first wrapped in a white cotton garment, which was probably the dress worn during life. It is of firm texture and excellent weave, and large portions are found in a good state of

preservation. The outer wrapping of the body was a robe of otter or beaver fur, made by first twisting a small rope of yucca fiber about an eighth of an inch in diameter; then, with the shredded fiber of the eagle or turkey feather, the fur was bound upon the cord, producing a rope about a quarter of an inch in diameter which was then woven into a robe with open mesh. It seems probable that this was the customary wrapping of the dead but, as the majority of interments were in the open, the wrappings are for the most part decayed. Many fragments have been recovered in talus burials, but not until the crypt burials were discovered was the material found in a good state of preservation.

The situation of the large cave kiva was mentioned above. As it is not within the bounds of any village, but stands completely isolated, it has been conjectured that it was designed for tribal rather than clan use. It is almost circular in form, and entirely enclosed within the walls of the cliff. Our entire force of Indian workmen, numbering as many as eighteen at a time, have found in it ample space for sleeping. As it is the best example of its type that has been discovered, it was deemed best to restore it.

El Rito de los Frijoles might well be called "The Place of a Thousand Camp-fires." It marks the boundary between ancient Keres and ancient Tewa territory. The name of its great community center, Tyuonyi (place of council or treaty making) is reminiscent of ancient council fires and of this the traditions of the Rio Grande villagers of Cochiti and San Ildefonso are confirmatory.

Since 1907 the Rito has come back to life. It has been the scene of the excavations of the School of American Research for many seasons. Here, summer after summer, students of archæology, managing boards,

museum regents, and visitors from distant parts of the world have gathered for study and conference. The camp-fires of these kindred spirits are among the cherished recollections of hundreds who have been privileged to foregather in this romantic spot. If the Indians are right, there must be many a notable reassembling in the Rito of those who counted it an experience of a lifetime to gather around its sacred camp-fires after busy days of excavation and join in song and story and scientific discussion. If a roll-call could be had there would be, when the names are answered, those of scholars, writers, artists, men of science, learned professions and public affairs, whose lives were built into the ever rising structure of this nation. These are spirits who can be assembled for council only in the memory of great days. Among the archæologists who have been moving forward the frontiers of knowledge of southwestern antiquity during the past twenty years, there are but few who have not sat in council around the never-to-be-forgotten camp-fires of the Rito.

THE PUYÉ

Puyé is one of the most extensive of the ancient cliff ruins of the Southwest. It occupies an imposing situation on the Pajarito Plateau, ten miles west of the village of Espanola and thirty miles northwest of Santa Fe. Since 1880 the place has received some attention in the writings of Powell, Bandelier, Lummis and the present writer. Through widely published photographs its general appearance has been well known for some years, and much has been said concerning its history, based upon surface evidence and Tewa story. But it is the spade that must be depended upon to lay bare the record. It is entirely pre-Spanish.

At first, determined opposition to the excavation of the ruins was offered by the Indians from Santa Clara, ten miles away in the Rio Grande Valley, on whose reservation the site is located. The governor, head men and representatives of the caciques, or religious rulers, were met in council and the matter discussed. It was explained to them that this was our way of studying the history of the Indian tribes; that we believed the thoughts and works of their ancestors to constitute a noble record, worthy of being preserved for all time. Some appeal was made to their sense of gratitude for assistance rendered them in the past in securing from the government a much-needed extension of their reservation, and a law releasing them from the payment of taxes on their lands, which at one time had threatened the extinction of the titles to their homes. Bare reference was made to the fact that under the permit of the Department of the Interior we were acting entirely within our rights in making excavations on their reservation. On the whole, their contention was on a high plane, and the council marked by much lofty sentiment. It ended in the withdrawal of all objection and most cordial relations were established. This friendly attitude has never changed.

Geologically, Puyé is a rock of grayish-yellow tufa, five thousand seven hundred and fifty feet long, varying in width from ninety to seven hundred feet. It is a fragment of the great tufa blanket that once covered the Pajarito Plateau to a thickness of one thousand five hundred feet. This covering has been dissected by ages of water and wind erosion. In the northern part not over ten per cent. of it remains. These fragments appear as a multitude of geological islands, some almost circular, but mostly long strips (in Spanish, *potreros*),

extending east from the base of the Jemez Mountains toward the Rio Grande. They present, on the south side, vertical escarpments rising above talus slopes that reach almost to the dry arroyos in the valley bottoms. The north side is always less abrupt, presenting only small escarpments and long gentle slopes to the valley. There is scant soil on the tops of these mesas. The valleys are lightly forested with pine of not very ancient growth. The altitude is about seven thousand feet above sea-level.

The view from the top of the rock of Puyé is almost beyond compare. A few miles to the west is the Jemez range, with its rounded contours and heavily forested slopes. On the eastern horizon one sees a hundred and fifty miles of the Santa Fe range, embracing the highest peaks in New Mexico. The northern extremity of the panorama lies in the state of Colorado. At the south end, near Albuquerque, is the rounded outline of the Sandia Mountain, Oku, the South World Mountain of Tewa mythology. The synclinal trough of the Rio Grande extends from north to south between the two ranges. The portion of it here seen formed the bed of a Miocene lake. The expanse of yellowish Santa Fe marl, which the winds have piled into rounded dunes and trimmed into turreted castles, presents at all times a weird and fantastic appearance. In the immediate foreground to the east one looks down upon a level plateau stretching away to the valley. In the summer and fall this is variegated by masses of yellow flowers which cover the open parks among the junipers, marking the fields of the ancient inhabitants. Beyond this lie several miles of open grass lands. To the northwest about a mile and a half the yellow rock of Shufinné dominates the plain, and to the west and south lie numbers of the

detached masses which I have spoken of as geological islands. Southeast about ten miles the round black bulk of Tuyo rises from the edge of the Rio Grande Valley. It is an example of the recent basaltic extrusions which characterize the Rio Grande Valley from here south through White Rock Canyon. This is the historic "Black Mesa," the scene of many stirring events of the early period of Spanish occupation. In Tewa mythology, Tuyo is the "Sacred Fire Mountain." Its top is covered with the remains of semi-subterranean dwellings, and fire shrines are maintained there by the Indians of San Ildefonso.

Puyé was the principal focus of a population that occupied a number of villages in the northern part of this plateau. There are many small-house ruins, containing from two to fifty rooms each, scattered over the district.

The northernmost settlement is the Shufinné (Tewa: Tsiphenu; *Tsi,* obsidian flake; *phenu,* dark—dark colored obsidian flakes). The town lay to the northwest of Puyé about a mile and a half and was separated from it by the deep gorge of Santa Clara Canyon. It occupied a small tufa island, the only one north of the canyon. The rock of Shufinné is a commanding feature of the landscape, being visible from the Tesuque divide, just north of Santa Fe, a distance of about thirty miles. The settlement consisted of a pueblo on the top of the rock, and a group of houses built against the vertical wall forming the southern face of the cliff.

The network of trails over this section is one of its most interesting archæological features. The trail is a sharply cut path, usually about eight inches wide, from a few inches to a foot in depth, and in many places more. The path narrows but little toward the bottom and is

remarkably clean cut. A large part of the surface of the plateau is rock devoid of soil, and these paths afford an imperishable record of ages of coming and going. The well-worn stairways are worthy of particular notice.

The Puyé is a fine example of the ancient Pajaritan community. At this place is found everything that is characteristic of the Pajaritan culture; every form of house ruins, typical in construction and placement; sanctuaries, pictographs, implements, utensils and symbolic decoration.

The Puyé settlement was made up of two aggregations of dwellings: 1. The great quadrangle on the mesa top; an arrangement of four terraced community houses about a court, forming at once an effective fortification and a capacious dwelling; a compact residential fortress. 2. The cliff villages, consisting of dwellings built against and within the wall of the cliff, usually at the level where the talus slope meets the vertical escarpment.

The cliff is broken about midway of its height by a ledge which shelves back a few yards and then meets another vertical wall. On this ledge against and within the upper wall is another tier of dwellings, a continuous extent of house remains about a mile and a half in length. The dwellings of the upper ledge were quite like those below. Here are the simple cave-like houses, the porched chambers and the terraced pueblo against the cliff, with excavated back rooms. It was possible to step from the housetops on to the rim rock above. In places heavy retaining walls of stone were built on the front of the ledge. Stairways cut in the face of the rock ascend from the upper ledge to the community house on the top. This stands near the edge of the cliff, the southwest corner approaching to within twenty feet

of the brink. The huge quadrangular pile of tufa blocks gives at first the impression of regularity of plan, but on examination the usual irregularities of pueblo buildings are found. It would require a rectangle approximately three hundred by two hundred and seventy-five feet to enclose the pile. No two exterior walls are exactly parallel, but the orientation of the building is approximately with the cardinal points.

At the southeast corner is the main entrance to the square, seventeen feet wide at the outer end but enlarging to double that width before it opens into the court. A passage thirteen feet wide, at the southwest corner of the court, segregates the South House of the quadrangle from the other three sides. It is probable that this was a covered passage. A low oblong mound, its longest diameter about one hundred and fifty feet, lies just outside the main entrance. A mound of similar character almost touches the southeast corner of the pueblo. They were the community cemeteries from which several hundred skeletons have been taken.

One subterranean sanctuary is found against the outer wall of the East House, and another somewhat larger lies north of east of this one. The largest kiva on the mesa top lies west of the quadrangle. These kivas were all excavated in the rock, there being almost no covering of soil at this place. Others are found on the ledge of the cliff below, and still others in the talus.

An ancient reservoir lies forty yards west of the pueblo. The embankment is made of stone and earth, the opening being on the west. It could have been useful only for impounding surface water. The potable water for the pueblo was derived from what is now the dry arroyo south of the mesa. At one point a meager supply can still be obtained by opening a spring in the

sand, but, as on all parts of the plateau, a much larger water supply than that now existing would be essential to the maintenance of such a large settlement. An evidence of such supply is to be seen in the irrigation canal which may be traced for nearly two miles along the south side of Puyé arroyo. This ditch heads above the mesa and must have been used to conduct surface water from the mountain gulches to the level fields south and east of the settlements. It is possible that it was constructed during a late temporary occupation of Puyé by Santa Clara Indians, after their knowledge of irrigation had been augmented by contact with the Spaniards in the Rio Grande Valley.

While the main outlines of the story of Puyé have been told, there yet remains endless excavating to be done. The School of American Research carries on its investigations here intermittently and will for many years to come. The great community house on the top of the mesa is only half uncovered. The North House will probably be left for future generations to investigate. The small-house ruins on the mesas and in the valleys call for study and a mile of talus villages awaits excavation at the base of Puyé cliff. There is no better training-ground for students of archæology in all the American Southwest.

Of late years the Puyé has come to be the most visited of any ruin in New Mexico. Its accessibility to travelers, its enchanting situation, the work done by the students of archæology which has resulted in bringing to light a clear picture of the ancient life of the Pajarito Plateau, could not fail eventually to bring thousands of travelers who are seeking education and recreation. The Puyé has become one of the principal objectives of the Indian Detours of the Santa Fe Railway Com-

pany. In cooperation with this great travel enterprise the School of American Research has established a field museum to contain the finds resulting from the excavation of the ruins. It is the extension of an idea proposed at the beginning of its work in the Southwest that archæological material can best be studied on the ground from which it is taken. The collection constitutes a branch of the State Museum of New Mexico.

3. By the Waters of Posoge and Its Tributaries

To the surviving communities of the Rio Grande Valley this great river is simply Posoge: (Big River; Tewa: *Po,* water; *so,* large; *ge,* place—Place of the Great Water). When we think what streams of its importance have meant to the peoples of the Southwest and of the world from time immemorial, it is not to be wondered at that primitive men have personified and in some cases deified such great sources of life, as with the Ganges and the Nile. So far as we know, the Pueblos did not personify their "Great River" as the Navaho do their San Juan. That it was a more beneficent stream, however, or at least a more effective one, is evidenced by the fact that the San Juan country had lost its population and become a desert before it was ever seen by white men, while the Rio Grande had maintained its people to the extent of between eighty and ninety villages down to the time of the Spanish occupation.

The towns that now rest upon the banks of the Great River and which were enumerated in a preceding chapter are all of modern origin. To find their antecedents we must go into the side valleys east and west of the main stream; especially into the mesas and foot-hills of the ranges on both sides where it was convenient for the

earliest type of house-building and for the most primitive style of irrigation.

THE CHAMA VALLEY

The largest western tributary of Posoge is the Chama (Tewa, Tzama). The Tzama is a large and never-failing river, its water so red that it tinges the Rio Grande for many miles below the confluence. The Indians of San Juan pueblo still use an ancient Tewa name for the Chama which means Red River.

The ruins of several large towns are to be seen on both sides of the Tzama beginning with Yuque Yunque at the junction with the Rio Grande and extending up the river to above the present town of Abiquiu. At the former place, Oñate, the colonizer of this northernmost province of New Spain, located his capital in 1598. The spot, therefore, has the distinction of being the site of the earliest capital founded within the present limits of the United States, St. Augustine in Florida having been merely a settlement and not a seat of government. This Indian town, and also the one at Abiquiu, survived into the historic period. South of the Tzama on the mesas are not only large ruins of late pueblo types, but miles of foundation walls no higher than the grass roots, to which many years ago I gave the name pre-Pueblo ruins. This term I would not now use, but would simply call them early Pueblo.

The largest ruins of the old Tzama land are to be found along the northern tributaries. Most important of these are Sepawi, on El Rito Creek, and the group comprising Homayo, Houiri and Posoge at Ojo Caliente, the Mexican town so-called from the hot springs which give name to the entire valley. In this group of ruins we have done a considerable amount of excavating.

Judging from the house construction and pottery types we have in the towns of the Chama a stage in the evolution of pueblo life between the archaic Pajaritan culture and that of the living towns.

TEWA LAND

The valley of the Great River which lies between the crest north of Santa Fe and Embuda Canyon thirty-five miles north, has always been regarded by the Tewa people as their world. In the chapter, "Catalogue of the Towns," it was noticed that three villages, San Juan, Santa Clara and San Ildefonso, still hold their own on the banks of the Great River. Two, Nambe and Tesuque, are several miles back upon eastern tributaries. The long decline of Tewa Land is attested by the débris of many towns between the river and the mountains to the east, the last of which to expire was Pojoaque.

A wealth of tradition and folk-lore comes down from the ancient Tewatowa (Tewa people). The benevolent Poseyemmo still holds first place among Tewa deities, now thoroughly confused with the Montezuma tradition. Awanyu, the plumed serpent deity of the ancient Pajaritans, still furnishes the motif for much decoration of pottery and ceremonial raiment. The giant Tsaviyo no longer comes forth from his cave under the Black Mesa on the eastern bank of the Great River, he and his family having been exterminated, in due time, by the Twin War Gods, the Jack the Giant-Killers for the whole Pueblo world. But Tsaviyo and the adventures of the Hero Twins are still the subject of countless stories related by Tewa traditionists during winter evenings around their firesides, in the kivas and at archæologists' camp-fires.

TANO LAND

From Santa Fe, La Villa Real de Santa Fe de San Francisco (the Royal City of the Holy Faith of Saint Francis), long the capital of the northernmost province of New Spain and now of the state of New Mexico, there stretches away to the south to the base of Sandia and San Pedro Mountains an elevated valley which for some centuries was the seat of many towns of the Tanotowa (Tano people). This great plain south of the Tewa country, east of the Rio Grande and including, on the east, the communities of the Galisteo Basin, was the ancient Tanuge. It is sometimes called the Santa Fe plain; also the plateau of Santa Fe. It was the home of the southern Tiwa people but not one of their towns exists to-day.

Former towns of the Tanotowa which, as indicated by their names, existed into Hispanic times, were San Cristobal, Galisteo, San Lazaro and San Marcos of the Galisteo Basin and the plain to the west. Where the city of Santa Fe now stands was the town of Kwapoge (Place of the Shell Beads near the Water). Its ruins are to be seen on the acropolis above the city under the ruins of modern Fort Marcy. Across the river to the south, where San Miguel chapel now stands (not the oldest church in the United States by any means) the town of Analco was built (Analco: Aztec word—*Atl,* water; *nalli,* the other side; *co,* on—On the Other Side of the Water). This town was built, or at least named, after the founding of the Spanish capital. The old Palace of the Governors, which is now the seat of the School of American Research and Museum of New Mexico, is built upon the site of an ancient pueblo. The massive wall of the central axis, made of the puddled adobe characteristic of Indian construction before the

art of making adobe bricks was introduced by the Spaniards, is to be seen under glass in one of the Palace rooms. The beginning of Spanish construction is clearly disclosed by the laying bare of the actual sections where the builders of the Palace commenced to lay their walls with blocks of adobe upon the ancient puddled wall. Back of the Palace proper where excavations were made for the heating plant, and also across the street to the west in laying the foundations of the art gallery, were uncovered cemeteries of the ancient pueblo with numerous graves and a considerable amount of pottery and other artifacts now to be seen in the museum cases.

In short, wherever the spade goes into the soil underlying the city of Santa Fe, remains of antiquity are encountered. This was doubtless the site of one of the earliest of Tano towns, a string of which was built down the Rio Santa Fe as far as the present Mexican town of Agua Fria, and again, after a gap of a few miles, at La Cienega above La Boca, where the Rio Santa Fe emerges from the canyon into the plain lying between La Bajada and the Great River, this valley doubtless belonging to ancient Keres communities.

Five miles south of Santa Fe on the southern brink of the Arroyo Hondo, which here forms a canyon several hundred feet in depth, is the ruin of Kuaka. The situation commands a wide view of the valley to the west and southwest across the plain. To the south is the level plateau to San Pedro Mountains. It was well situated for observation and defense and could have housed from six to eight hundred people. There is every reason to believe that it was abandoned long before the Spanish invasion.

On the southern rim of the Santa Fe plain at the base of Sandia Mountain stood the town of Tunque,

Village of the Basket People; or, possibly, the Tano form Tung-ke may mean "Down in the Basket." It certainly was a Tano village, probably the southwestern-most of the ancient Tano Land. Just back of it to the south is Sandia Mountain, Oku or Oku-piñ of Tewa mythology—the South World Mountain of all the Tanoan peoples to the north. It is the Mount Olympus of the Rio Grande Valley. In the red cloud on its summit dwelt Oku-wa-piñ, father of the Twin War Gods. Here the Hero Twins were reared, and from this mountain they went out on their mighty adventures among the giants. Oku Mountain is also the home of Wakwijo, Mother of the Winds which make the middle Rio Grande Valley somewhat disagreeable at times.

East of Sandia Mountain in the San Pedro Valley is the ruin of Paako. This large town marks the southern limit of Tano Land, though a frontier village of Tiwa-speaking people, Quarai, got itself located some miles to the southeast, well within the confines of the Piro Land.

It will be noticed that nearly all of the towns above mentioned were situated on the tributaries of Posoge rather than immediately upon its banks.

KERES TOWNS

The antecessors of the Keres villages which are at present by the Rio Grande and its western tributary, the Jemez, seem to have lived among the canyons and mesas of the southeastern part of the Pajarito Plateau, extending north as far as El Rito de los Frijoles. The people of Cochiti, especially, are persistent in claiming the ruined towns to the north of their present village as the homes of their ancestors. This is probably correct, but it will be remembered that the Keres people

extend to the west of the Rio Grande as far as Laguna and Acoma. I am of the opinion that the numerous ruins around the northern and eastern slopes of Mount Taylor and scattered for many miles along the Rio Puerco were the habitations of Keres communities. In this region between the Puerco and the Great River lie the remains of the "Sky Pueblo." More noted, however, is their mythic Village in the Clouds, Makowa oñwi (*Makowa,* sky; *oñwi,* pueblo—Sky Pueblo). This is the scene of a veritable Helen of Troy episode in which a Tewa man with the help of the Spider Woman, who spun a bridge from the top of Oku Mountain to Makowa, the Sky Pueblo, was able to bring back his stolen wife to the land of her own people.

Also among the mythical towns of both Keres and Tiwa is Tse oñwi (*Tse,* eagle; *oñwi,* pueblo—Village of the Eagle People), which also lies in a fabled land to the west. The mythic pueblo of the Macaw people, Tanyi oñwi, is situated far to the southwest (Sonora?). Here in a valley surrounded by cliffs of four colors live an ancient Macaw people in houses built of parrot feathers.

CORONADO'S TIGUEX

On both sides of the water of Posoge between Bernalillo on the north and Isleta on the south were the towns that made up the province of Tiguex, probably the most densely populated part of the Southwest when first seen by the Spaniards. Here Coronado made his headquarters, 1540-42, and from here he went on his fruitless tour of the great plains in search of the fabled Gran Quivira, and it was from here that he returned empty-handed to the City of Mexico.

The villages of Tiguex province spoke the Tiwa language. Of those of Coronado's time, two survive:

Isleta, the southernmost town of the province, and Sandia, fourteen miles north of Albuquerque. Several large ruins lie on the western bank of the Rio Grande, one just north of Bernalillo bridge, and three others from two to eight miles south. The northernmost of these would seem to be the Kuaua of Castañeda and the next one, two miles south, answers perfectly the description of the historic Puaray. It should be said that the historians locate the Coronado pueblos to the east of the Rio Grande. Here the testimony of the archives is in conflict with the archæological evidence. Professor Hackett makes out an irrefutable case for the location of these pueblos east of the river where there is not a vestige of former towns, while the archæologist shows on the western bank extensive ruins exactly where they should be to fulfill the descriptions of the first white eye-witnesses. Some one must unscramble the towns of Tiguex province. It is one of the historic areas of America. Here a European army was encamped for part of two years sixty-seven years before Jamestown was settled, eighty years before the Pilgrims landed at Plymouth Rock. Here was made history which in the long lapse of years was to result in vast additions to the domain of the United States of America.

In this province of which we have unbroken history for well-nigh four centuries, there is the best opportunity I know of for the study of archæology in the making. The pueblo of Sandia, fourteen miles north of Albuquerque, is one of the finest examples that can be found anywhere of a process that has gone on with variations in all parts of the world. In the little decaying village we may see an epitome of world culture, more illuminating than anything we can uncover in excavations that cost thousands of dollars and endless toil.

The community has passed through experience that is world-wide; that small groups and large groups, in all races and all ages have met with, have endured, or succumbed to, according to the severity of conditions imposed upon them. This is human history. It is archæology in the making. Several causes have operated to extinguish communities. The small tribal group of the most rudimentary social type; the highly organized town such as one of these pueblos; the city-state, such as Nineveh; all have run parallel courses.

First, war has wiped out entire communities at a blow; the entire population killed or carried away, the buildings destroyed, the place abandoned and within a few years nothing to be seen but mounds of earth. Sudden destruction accounts for many an archæological site, especially in the Old World.

Second, natural decline, slow decay, the process of old age which a group must undergo even as an individual does, has operated to put many a community under the soil. In the first case the archæological process was sudden, violent. In the second it was natural, long drawn out.

Third is a process still more common, result of numerous complex causes. There has been a period of normal growth, interruptions by epidemics, natural catastrophes and so forth. An entire population carried away, in time returned, resettlement accomplished, all sorts of fluctuations of fortunes, resulting at last in a stabilized condition; then slow decay and final extinction through normal physical decline or amalgamation with another race.

Sandia pueblo is an example of the third process. It was one of the towns of the province of Tiguex of Coronado's time. It belongs to the Tiwa linguistic

group with Isleta, Taos and Picuris. A mission was built here early in the seventeenth century. In 1680 came the Pueblo Rebellion, the town was abandoned, burned down by Governor Otermin in 1681. The people, almost the entire population, went to Tusayan, settled among the Hopi, built the pueblo of Payupki on the middle mesa. They remained away sixty-two years; two generations. In 1742 they were induced to return and resettle here. The Hopi people call them Payupki people to this day. They numbered four hundred and forty-one people when they came back. The census of 1910 gave them seventy-eight. They are greatly demoralized and will disappear from physical causes and amalgamation with the Mexican. In their houses you see survivals of objects of domestic use that we dig up from the cliff-dwellings.

But the most significant thing we learn at Sandia is the process of cultural deposition. It illustrates how cautious we must be in talking about "stratified culture." On the south side of the town they are dumping the refuse to-day; also on the northwest to a small extent. Twenty years ago the principal dump was on the east. They are continually changing from one spot to another. On the north is the most conspicuous mound of the town. It belongs to past centuries. There you find the potsherds and chippings of centuries ago. Almost every type of pottery found in the Rio Grande drainage is here on the surface. It is a striking lesson. Culture does not always stratify. The deposition of remains may be in spots rather than in layers. Here on a single level are remains of many decades widely separated in time. Débris of five hundred years ago may be superimposed on that of ten years ago, rearranged by cultivation. Be extremely conservative, then, in establishing patterns

of cultural stratification. Archæology is one of the most deceptive of sciences. Its phenomena are extremely complex and misleading. Errors of sequence, of nomenclature, tend to become accepted as facts. American archæology, more than any other branch of the science, is paying the penalty of premature conclusions.

THE PROVINCE OF JEMEZ

The most populous of the valleys tributary to the Great River on its western side, was that of Jemez. Without going into the many accounts of the derivation of this name, it may be said that to the Indians of the Rio Grande Valley generally, Jemez Valley was "The Hot Place," or, more specifically, "The Place of the Boiling Waters." Hot springs occur at intervals all the way from Giusewa where the Jemez Springs resort now is, up the valley for twenty miles. It seems likely that Giusewa was the most populous of the many Jemez towns; at least, it was the most strategically located, for here the Franciscan fathers built one of their earliest and most important missions. It was built at about the same time that Pecos mission was founded among a kindred people sixty miles to the east, probably in the year 1617. The ruins of this noble structure, a century and a half older than the oldest California mission, still exist in an excellent state of preservation; one of the finest monuments to the zeal of the disciples of Saint Francis. The town of Giusewa, like several others in the Jemez province, came to an end with the outbreak of the Pueblo Rebellion. Neighboring villages were Patokwa, at the mouth of the canyon of San Diego de Jemez, Astialakwa, and Amoxiumkwa on the brink of the great mesa eighteen hundred feet above the bottom of the valley; Tovakwa, in the midst of the pine

n Excavated Talus Village. The Pajarito Type of Cliff Dwelling, Puyé, New Mexico.

Archæological Camp School, Jemez Canyon.

Ruins of Gran Quivira: The Mythical Treasure Town.

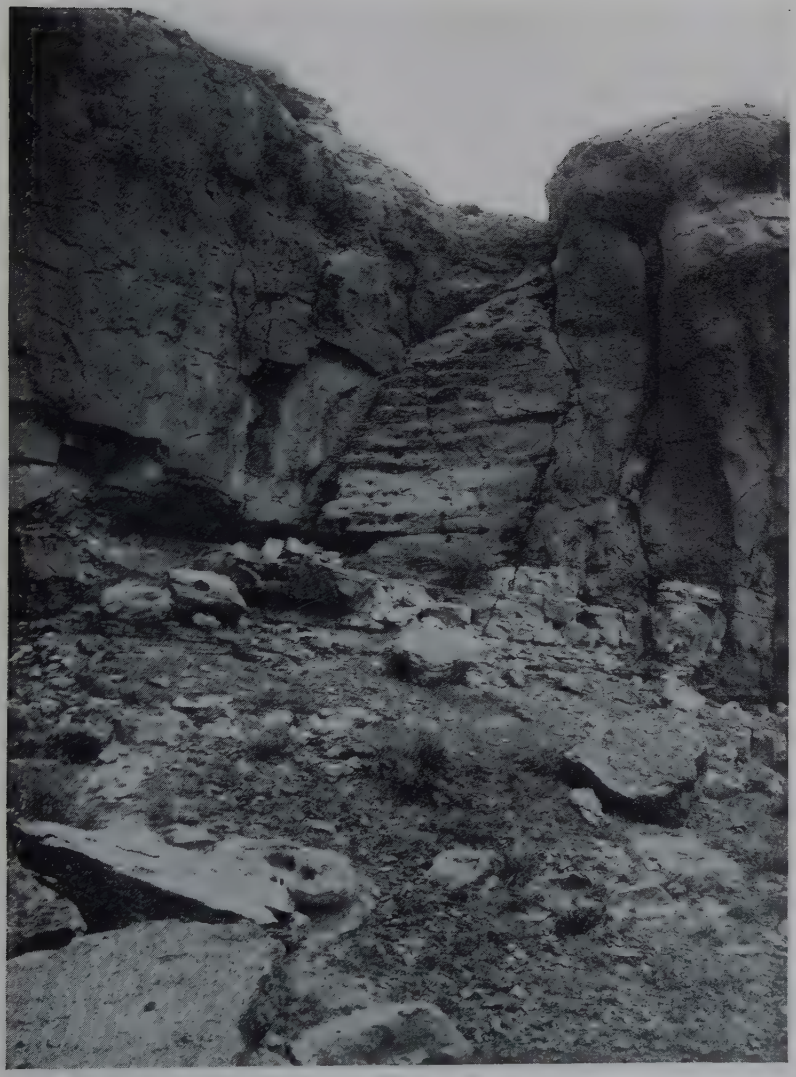
Ruins of Quarai Mission.

Ruins of Abo Mission.

Spruce Tree House, Mesa Verde, After Excavation.

Cliff Palace, Mesa Verde, Before Excavation.

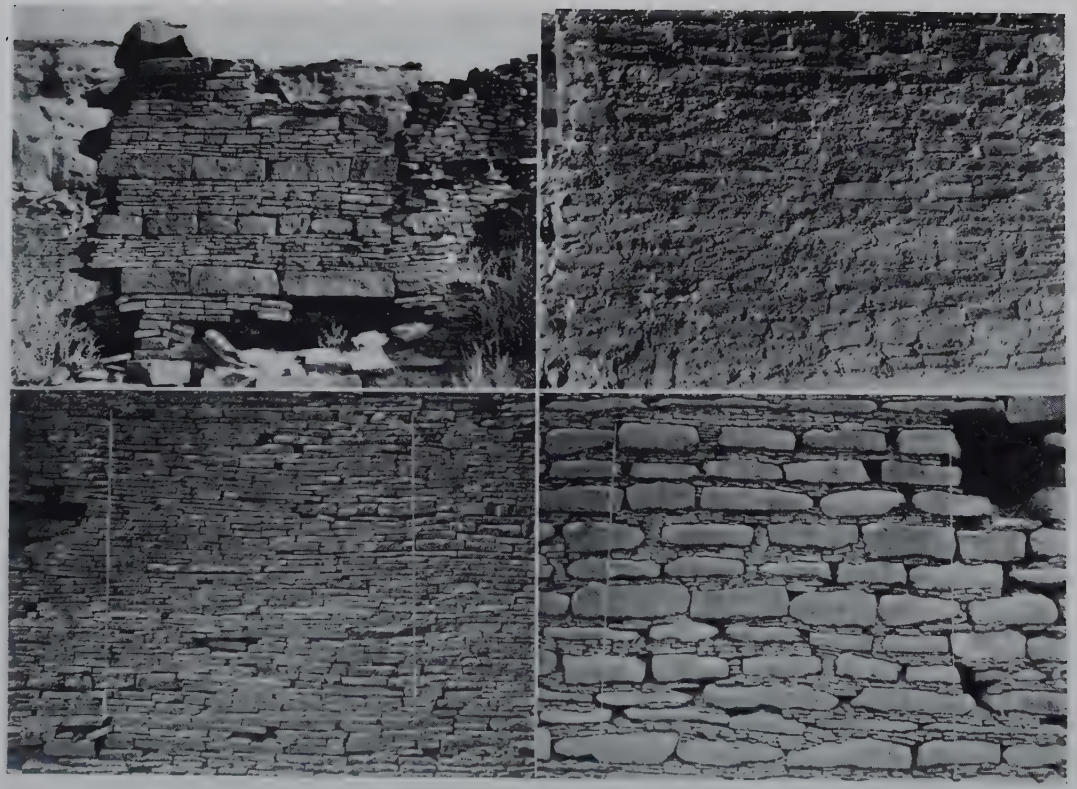
Balcony House, Mesa Verde, After Excavation.



Great Stairway at Hungopavi, Chaco Canyon.

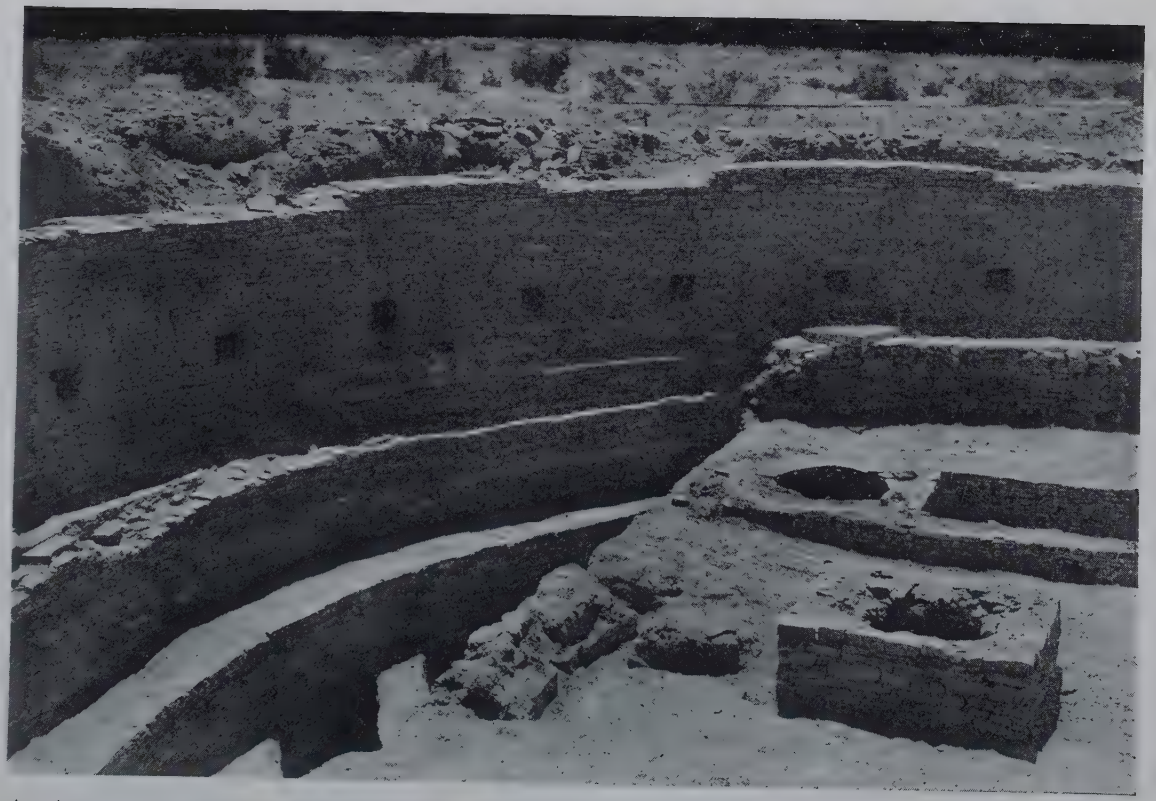
Chaco Canyon Excavations, 1930.

Excavating a Great Community House, Chaco Canyon.

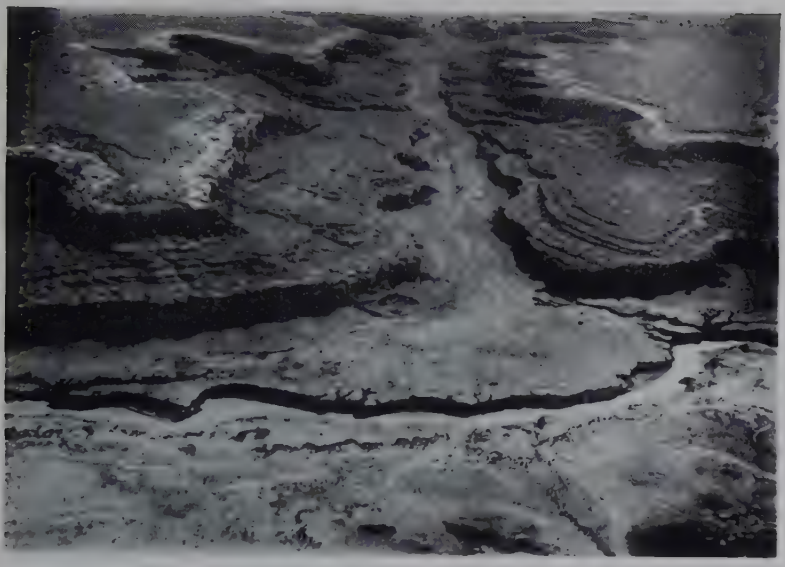


Types of Masonry, Chaco Canyon.

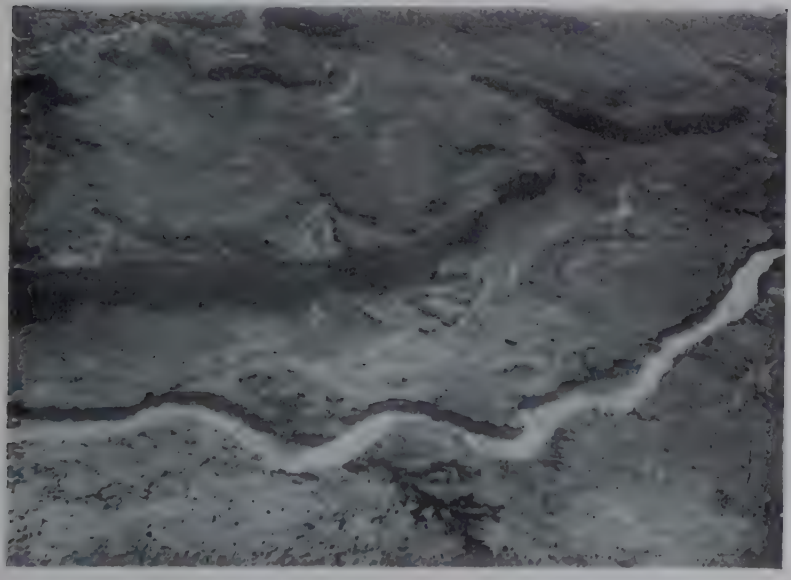
The Great Sanctuary at Chetro Ketl. Underneath this, now being excavated (1930) are the Ruins of an Ancient Amphitheater.



An Ancient Amphitheater under the Ruins of The Great Sanctuary at Chetro Ketl. Now being excavated (1930).



Aerial Survey of Chaco Canyon, 1929.
Chaco Ravine and Side Canyon over Ruins of Hungopavi.



Aerial Survey of Chaco Canyon, 1929.
Pueblo del Arroyo—Pueblo Bonito—Chetro Ketl.

Life Designs. Geometric Designs.

Mimbres Pottery.

Near the Entrance to the Great Jemez Crater.

Ancient Trail in the Rock, Pajarito Plateau.

forest between Jemez and Guadalupe Canyons, several populous towns to the east of the canyon of San Diego de Jemez, and others of apparently greater age in the bottom of the valley, above the town at the boiling springs. In the ruins of these older towns, excavations are conducted from year to year by the University of New Mexico and the School of Research, the camp at the foot of Battleship Rock having become a permanent scientific station for the study of archæology and natural history.

The Pueblo Rebellion of 1680 resulted in a general breakdown of the towns of Jemez province. Many communities scattered to the west into the Navaho Desert to remain and intermarry among the Navaho for several decades. With the return of tranquil conditions, these exiles were gradually induced to return to the Jemez homeland. The result of this restoration was a concentration of all the scattered communities at the present pueblo of Jemez, some ten miles below the original Town of the Boiling Waters. Here now reside in one integrated community the remnants of more than twenty villages of the ancient Jemez province, with whom are consolidated the descendants of the abandoned frontier stronghold of Pecos.

4. Frontier Strongholds

The Valley of the Great River (Posoge) is rimmed on the east by a succession of mountain ranges, not continuous as the Front Range is in Colorado, but broken through by elevated valleys which connect the Rio Grande Basin with the Great Plains, a feature which had much to do with the early history of the Southwest. It permitted the raiding tribes from the Great Plains, such as Comanche, Apache and Pawnee,

to enter the land of the Pueblos through these natural gateways for the purpose of looting their stores of corn, beans and squashes, of carrying away a few captives occasionally, and later, after the coming of the Spaniards, of adding to their much prized herds of horses by driving off those of the peaceful Pueblos.

These detached mountain ranges are the Sangre de Cristo, which extend south to the latitude of Santa Fe. Here the range ends and the Santa Fe Plain, described in the previous chapter, occupies the gap south to the Sandia and Jemez ranges. This was the ancient Tano Land, exposed to the forays of the eastern raiders.

The next range separating the middle Rio Grande from the Great Plains consists of the two just mentioned, and their prolongation, the Manzanos. In the northern valleys of these ranges, Tanoan communities settled. In the passes across the Manzano range, on the mesas, in the valleys of the eastern slope, and across the range to the southwest, reaching the Rio Grande where the town of Socorro now is, a people speaking a different language from any heretofore mentioned had their villages. These were the Piro, a stock that had been very numerous prior to the Spanish invasion but which, like most of the Pueblo groups, had for some generations been on the decline. The ruins of ten or more of the ancient Piro towns can still be located. Some of these villages were built within easy distance of the Salt Lakes east of the Manzano Mountains and, in all probability, gained considerable economic advantage from their proximity to this commodity.

The Manzano range ends and high valleys intervene between it and the southernmost spurs of the great Front Range of the Rocky Mountains, beyond which the Rio Grande swings to the southeast and procedes on

its way to the Gulf of Mexico. These final ranges are the Sacramento, the Organ and the Guadalupe, within and around which early inhabitants of the Southwest were distributed in such fashion as best suited their mode of life.

It was but natural that this geographic barrier should become a tribal frontier. To the east were the Great Plains where a mobile food supply, the buffalo, tended to perpetuate a nomadic life. On the other hand, the rock shelters of the mountains, the little valleys with threads of fertility, and water supply essential to the growing of crops, invited the sedentary life. The overflow from the tributaries of the Great Valley naturally moved to the east but stopped as it faced the Great Plains. To hold its own, it was not only necessary to build houses that served for both residence and defense but certain favored spots became strongholds of the frontier.

GRAN QUIVIRA—THE MYTHICAL TREASURE TOWN

Of the towns of the Piro people, no other has had the romantic history of Gran Quivira. It was built upon a hill of bluish gray limestone east of the Manzano range at the northern end of the dark Mesa Jumana. Its Piro name was Tabira, of unknown meaning, doubtless suggesting the name Quivira which finally became attached to it. Tabira was not the half-mythical place that had lured the Spaniards to the north and led them out on their wide circuit of the Great Plains. The myth-makers of that time seem to have had in mind a plains tribe living in the neighborhood of the present Lyons, Kansas, though how they managed to graft the Quivira myth upon the grass-house-building Wichita Indians has not been satisfactorily explained. With the burst-

ing of that bubble, the return of Coronado empty-handed, and the retreat of the disappointed Spaniards to old Mexico, the Quivira myth had to be perpetuated. No part of the world seems able to get along without its stories of buried treasure. In spite of the fact that the Spaniards found no treasure in New Mexico, for the very good reason that there was none there, and regardless of the certainty that if they had found any, they would have taken it away with them, fabulous tales were invented of hidden treasure. They had to be localized somehow, and so the large Piro town with its rather romantic situation, its name Tabira, which could readily be twisted into Quivira, became the town of the hidden treasure. Just when the craze got started we may never know, nor can we foresee when it will end. The pits and tunnels of the treasure hunters cover the hills in and about Quivira. Eager prospectors have toiled at the diggings for generations.

A Franciscan mission was built at Tabira in 1629 by Fray Francisco de Acevedo, which still existed in 1644, but the two churches and monasteries (one commenced between 1629 and 1644, the other probably between 1660 and 1670) were perhaps never completed. The pueblo was permanently abandoned between 1670 and 1675 on account of depredations by the Apache who were responsible for the depopulation of all the Pueblo villages east of the Rio Grande in this section. The inhabitants of Tabira fled to Socorro and Alamillo, New Mexico, finding their way to the vicinity of El Paso, Texas. Judging by the extent of the ruins, the former population of Tabira probably did not exceed one thousand five hundred.

Our excavations at Gran Quivira have included the clearing of the débris from the old mission church and

such repair of its walls as seems necessary for its future preservation. The rooms and corridors of the monastery which flanked the great church on the south have been partially emptied of their débris so that the entire church establishment can now be understood. The small chapel in front of the main church is of comparatively little interest. The indications are that it was abandoned before being finished and the larger church and monastery constructed to take its place. The excavation of the pueblo has proceeded far enough to give the main outlines of the principal plaza and establish the location of some twenty-two terraced houses with their accompanying kivas. One of the principal burial mounds was excavated, and sufficient skeletal remains recovered to provide for the physical study of the Piro people. A survey of the outlying valleys and hillsides established the fact that the people of Gran Quivira impounded water and conducted it through small canals for the irrigation of their garden plats. The source of the drinking water for the pueblo has not been determined.

Early accounts of this Piro stronghold are of particular interest in view of the scientific studies that have since been made. While the archæologists can not confirm the romantic accounts of early observers, they will be none the less interesting to read.

Pedro de Castañeda, the historian of Coronado's expedition, gives the following account of a place called Quivira which may or may not have been the Gran Quivira of this chapter. He says of the place and its inhabitants:

"Up to that point the country is only a plain; at Quivira mountains begin to be perceived. From what was seen, it appears to be a well peopled country. The plants and fruits greatly resemble those of Spain:

plums, grapes, nuts, mulberries, rye, grass, oats, pennyroyal, origanum and flax, which the natives do not cultivate because they do not understand the use of it. Their manners and customs are the same as those of the Teyas; and the villages resemble those of New Spain. The houses are round and have no walls; the stories are like lofts; the roofs are of straw. The inhabitants sleep under the roofs; and there they keep what they possess. . . .

"The Indians of the country have neither gold nor silver and were not acquainted with the precious metals. The cacique wore on his breast a plate of copper which he held in the greatest esteem. . . . Far from being evil, they are very gentle and very faithful in their friendships. They can make themselves very well understood by signs. They cut meat in very thin slices and dry it in the sun; they reduce it afterwards to a powder to preserve it. A single handful thrown into a pot answers for a meal for it swells greatly. They prepare it with the fat which they preserve when they kill a buffalo."

Three hundred years later Josiah Gregg wrote an account of Gran Quivira which must have had a great deal to do with stimulating the imagination of the treasure seekers. In speaking of the ancient ruins of New Mexico he says:

"The most remarkable of these are La Gran Quivira. This appears to have been a considerable city, larger and richer by far than the Capital of New Mexico has ever been. Many walls, particularly those of churches still stand erect amid the desolation that surrounds them, as if their sacredness had been a shield against which time dealt his blows in vain. The style of architecture is altogether superior to anything at present to be found in New Mexico. What is more extraordinary still is, that there is no water within less than some ten miles

of the ruins; yet we find several stone cisterns, and remains of aqueducts, eight or ten miles in length, leading from the neighboring mountains, from whence water was no doubt conveyed. And as there seems to be no indication whatever of the inhabitants having ever been engaged in agricultural pursuits, what could have induced the rearing of a city in such an arid woodless plain as this, except the proximity of some valuable mine, it is difficult to imagine. From the peculiar character of the place, and the remains of cisterns still existing, the object of pursuit in this case would seem to have been a placer—a name applied to mines of gold-dust intermingled with the earth. Other mines have, no doubt, been worked in the adjacent mountains, as many spacious pits are found, such as are usually dug in pursuit of ores of silver; and it is stated that in several places heaps of scoriæ are found.

"By some persons these ruins are supposed to be the remains of an ancient pueblo, or aboriginal city. This is not probable, for though the relics of aboriginal temples might possibly be mistaken for those of Catholic churches, yet it is not presumed that the Spanish coat of arms would be found sculptured and painted upon their façades, as is the case in more than one instance. The most rational accounts represent this to have been a wealthy Spanish city, before the general massacre of 1680, in which calamity the inhabitants perished, all except one as the story goes, and that their immense treasures were buried in the ruins. Some credulous adventurers have lately visited the spot in search of these long lost coffers, but as yet (1845) none have been found."

In December, 1853, a squadron of cavalry commanded by Lieutenant Samuel D. Sturges and a company of dragoons under the command of Major James Henry Carleton, numbering in all one hundred men, went on an expedition to explore the country

around Gran Quivira. The diary of this expedition contains a description of what was seen at that time which is well worth reading. It is here quoted at some length.

"We found the ruins of Gran Quivira to consist of the remains of a large church, or cathedral, with a monastery attached to it; a smaller church or chapel; and the ruins of a town extending nine hundred feet in a direction east and west, and three hundred feet north and south. All these buildings had been constructed of the dark blue limestone which is found in the vicinity.

"The cathedral, which we have seen from Laguna de la Puerta, is one hundred and forty feet long outside, with the walls nearly six feet in thickness. It stands longitudinally W. 15° S., with the great entrance in the eastern end. The altar was in the western end. Like the churches at Abo and Quarai, it is constructed in the form of a cross. From the doorway at the foot of the cross to the transept, it is eighty-four feet seven inches; across the transept, it is twenty-one feet six inches; and from thence to the head of the cross it is twenty-two feet seven inches; making the total length inside one hundred twenty-eight feet eight inches. The width of the nave is twenty-seven feet; the length, inside of the short arm of the cross, is thirty-six feet. A gallery extended along the body of the cathedral for the first twenty-four feet. Some of the beams which sustained it, and the remains of two of the pillars that stood along under the end of it which was nearest to the altar, are still here; the beams in a tolerably good state of preservation—the pillars very much decayed; they are of pine wood, and are very elaborately carved. There is also what, perhaps, might be termed an entablature supporting each side of the gallery and deeply embedded in the main wall of the church; this is twenty-four feet long by, say, eighteen inches or two feet in width, it is carved very beautifully, indeed, and exhibits not only

great skill in the use of various kinds of tools, but exquisite taste on the part of the workmen in the construction of the figures. These beams and entablatures would be an ornament to any edifice even at the present day. We have cut one of the beams into three parts to take back with us. The entablatures are so deeply set in the walls that we are unable to procure a piece of them. The beams are square, and are carved on three sides; the floor of the gallery rested on the fourth side.

"The stone of which the cathedral was built was not hewn, nor even roughly dressed; but the smoothest side of each piece was laid to the surface with great care. We saw no one piece in all the ruins which was over a foot in length. The mortar was made from the ordinary soil found upon the spot; it affords but a poor cement to resist the action of the elements and the ordinary ravages of time.

"The walls of the cathedral are now about thirty feet in height. It was estimated, from the great quantity of stones which have fallen down, forming a sort of talus both within the walls and outside of them, that, originally, this building was of fifty feet in height. There is a small room to the right as you enter the cathedral, and another room, which is very large, and which communicates with the main body of the building by a door at the left of the transept. There was also communication between this large room and the monastery, or system of cloisters, which are attached to the cathedral. The chapel is one hundred and thirty feet from the cathedral. This building is one hundred and eighteen feet long outside, and thirty-two in width; its walls are three feet eight inches in thickness; it is apparently in a better state of preservation than the cathedral, but yet none of the former woodwork remains in it."

The description of the ruins of the pueblo is no less interesting.

"A short distance from the chapel there is an enclosure, which we supposed was the ancient cemetery.

"The remains of the town are but heaps of stones, with here and there some evidences of narrow streets running nearly east and west, and north and south. Through these stones pieces of beams and sticks of wood are seen to project; these indicate, by moss and otherwise, that they are of very great antiquity; they are bleached white by the weather, and are deeply gnawed by the tooth of time.

"We saw some deep pits, which were circular, and walled around like walls; we believed them to be the remains of cisterns—they were not deep enough for wells; some have concluded that they were estufas. Two hundred and ninety feet north of the cathedral there are evident traces of an estanque; this, as well as the cisterns, was probably made to collect the rainwater which ran from the different buildings.

"Toward the east we saw a well defined road, which kept the ridge for a few hundred yards, and then turned off toward the southeast, where all further vestiges of it are lost in the sand. Where it is the most plainly marked along the summit of the ridge some large cedar trees are growing directly in the middle of it; these trees look to be very old indeed.

"In every direction about the ruins we found great quantities of broken pottery, many specimens of which we have collected to take to Albuquerque. Some of it is handsomely marked and well glazed. We also found several stones which were evidently once used as matates. These matates are in use to this day, to rub boiled corn upon until it becomes a kind of dough, suitable to be kneaded into cakes called tortillas. We have selected two, which we shall take home with us. These prove to us that the ancient inhabitants of Gran Quivira knew the use of corn as an article of food.

"There is no sign that the ground in the vicinity has ever been cultivated, and no mark whatever of irrigating ditches. Indeed, an acequia, or open aqueduct, could

not, it is believed, have brought water to the Gran Quivira, for the point occupied by the town appears to be considerably higher than the surrounding country.

"We were informed by men at Manzana who had been pastores in their youth, and had herded sheep in this region of country, that there is a fine bold spring of water at the base of the Sierra de las Gallinas, about fifteen miles from the ruins, and that they had heard that water once ran in an aqueduct from that spring to the Gran Quivira. This could hardly have been possible, unless the aqueduct was a closed pipe; because, from appearances the country intervening between those two points is considerably lower than either of them.

"We saw no indications that there had ever been such an aqueduct, nor did we see any sign that wells had been digged in the neighborhood. From every feature of the country, both within and without the surrounding sand-hills, we could but be lost in conjecture as to the method adopted by the inhabitants to obtain even water to drink, let alone for purposes of irrigation, unless they were supplied by some spring or stream that has long since disappeared. The nearest point where water can always be obtained now, is the spring which the pastores spoke of as being at the base of the Sierra de las Gallinas, fifteen miles away. The Laguna de la Puerta is 14 miles 773 yards from Gran Quivira, in nearly a direct line; but this is said to become entirely dry in seasons of great drought.

"As at Abo and Quarai, we were surprised at not finding, in the cathedral and chapel, some of the doorways and windows surmounted by an arch. Had they been so, originally, these buildings would be in a better state of preservation. The beams across windows and doors, in giving way to the weight above as they became decayed, made a fair beginning towards letting down the whole superstructure.

"Old Mr. Chavis, who overtook us soon after our arrival at Gran Quivira, informed Major Carleton that he had been told, when in his youth, by very old people,

that a tribe of Indians once lived here called the Pueblos of Quivira; that the Spanish priests came and lived amongst them, in peace and security, for twenty years; that during this period these large churches were erected; and that at the time of the great massacre there were seventy priests and monks residing here—all of whom were butchered excepting two, who contrived to make their escape; that previous to their massacre, the priests had had intimation of the approaching danger, and had not only buried the immense treasures which had been collected, but had concealed likewise the bells of the churches; that many years afterwards the people of Quivira died off until but a few remained; that one of these, a descendant of the chief, knew where the treasures were buried; that the remnant of the tribe afterwards emigrated and joined other Pueblos below El Paso; and that many years ago an old man, one of the last of the tribe, had told in what direction from the church these great treasures had been concealed. So far as the building of the churches and the massacre of the monks and priests are concerned in this account, as well as the final decrease and removal of the people who once lived here, there is no doubt but the story told by Mr. Chavis is, in the main, correct. The account of the depositories of the bells and the treasure is said to have been written down as given from the lips of the last cacique of Quivira, who, at the time he made the disclosure, was living away below Mesilla, on the Mexican side of the river. A copy of this paper has been secured, and is here inserted for the benefit of those who may take an interest in such matters.

"'In the cemetery of the great parish church, in the center of the right side, according to figure number one, there is a pit, and by digging will be found two bells. By taking the line of the opening left by the two bells, there will be seen to the east, along the lane left by the old church and the town, a hill, at the distance of three hundred yards, more or less, which forms precisely a line with the bells. At the foot of said hill is a cellar of

ten yards or more, covered with stones, which contains the great treasure.'

"The grammar of this document is preserved, as in the original. There can be no doubt but the belief that a large amount of gold and silver has been buried here, has for a great number of years been seriously entertained. We find in the cathedral and in the chapel, in every room in the monastery, in every mound of stones in the neighborhood, and in every direction about the ruins, large holes dug, in many places to the depth of ten feet, by those who have come from time to time to seek for these hidden treasures. Some of these holes look as if they were made more than a century ago, while others appear to be quite recent. Even the ashes of the dead have not been left undisturbed during these explorations. Near the east end of the chapel we saw where the people who had been digging had thrown up a great many human bones, which now lie scattered about. From these we have selected six skulls to send to some one who is skilled in the science of craniology, that he may determine, if possible, to what race of people they once belonged. These skulls are thought to be unusually large.

"The ruins of Gran Quivira have hitherto occupied the same position with respect to the boundless prairies which the fabulous island of Atlantis did to the ocean in days of antiquity. No one seemed to know exactly where this city was situated. But the uncertainty of its locality seemed to make no difference in regard to the interest that was felt concerning it; for people would believe in its existence, and receive great pleasure in listening to traditions about its marvellous beauty and magnificence, even when to a reasonable mind those traditions and accounts ran counter to probability.

"Men of genius and distinction have taken great pains in following up mazes in the labyrinth of reports concerning it, whether oral or written, and in their glowing descriptions it has appeared almost like a city of enchantment. To them it had paved streets, and fluted

columns, and ornate friezes, and sculptured façades; it had the remains of aqueducts and fountains; it had long colonnades, and even barbaric statuary; it had the groined arch, the shouldering buttress, the quaint gargoyle, and everything in outline and in detail that could betoken skill, and taste, and opulence. It was a city, they said, whose inhabitants departed from it so long back in the gloom and mists of the past as to leave in utter obscurity all other records concerning them.

"The sphynx, they said, about whose bosom the sands from the Lybian desert had drifted for unknown centuries, was no more of an enigma than this was. Here were palaces and temples, and deserted courts, and long-echoing corridors, and grass-grown streets, and reigning over all a silence so profound as almost to be heard.

"Historical societies had taken up these descriptions, and filed them away among their transactions as documents of deep interest. Venerable and learned ethnologists searched in dusty manuscripts and black-letter volumes of antiquity for some authentic account of that race of men who reared and then abandoned such a city. But to this moment their researches have proved fruitless, and the story they seek is still recorded in an unsealed book.

"Our business is not that which will permit us to clothe with imaginary grandeur these vestiges of a people whose name has been erased from the book of nations, nor that which will allow us time to indulge in abstruse speculations as to their race or their language. These things belong to the poet and philosopher. With all of those pleasant reveries and romantic fancies which these ruins away here on a desert are so wonderfully calculated to awaken we can have nothing to do. We came here to note realities; and now the facts we have seen, the theories we have read which were of value, the traditions we have heard deserving of attention, and the conclusions to which we have come concerning this interesting place, are all written down. All else save the things we saw admits of doubt, and is obscured by so

dark a cloud of uncertainty as to leave much ground for new theories, and for, perhaps, infinitely more valuable conclusions."

Such are the stories of the mythical treasure town. It seems unlikely that the visions of Gran Quivira's buried wealth will ever die. At the present moment, Congress is being bombarded for a special statute that will permit the treasure hunting to go on. No one can doubt the sincerity of those who believe that this wealth of precious stones, gold, silver and priceless antiquities is just within their grasp.

ABO OF THE MANZANO PASS

Another of the frontier strongholds was Abo, in the pass now bearing the same name, across the Manzano Mountains. It was first mentioned in 1598 by Juan de Oñate; it became the seat of the mission of San Gregorio, founded in 1629 by Fray Francisco de Acevedo who erected a large church and monastery, the walls of which are still standing, and died there August 1, 1644. Tenabo and Tabira were *visitas* of Abo mission. Considering the ruins now on both banks of the arroyo as those of a single pueblo, the population during the early mission period was probably two thousand. Owing to Apache depredation many of the inhabitants fled to El Paso early in 1671, and prior to the Pueblo Insurrection of 1680 the village was entirely abandoned for the same cause. The Piros of Senecu del Sur claim to be the last descendants of the Abo people.

Here again the naïve narrative of the army officer above quoted will afford a better picture than any scientific description. He says:

"The Ruins of Abo consist of a large church, and the vestiges of many other buildings, which are now but little else than long heaps of stones, with here and there portions of walls projecting above the surrounding rubbish. There is yet standing enough of the church to give one a knowledge of the form and magnitude of the building when in its prime. The ground plan of this structure is in the form of a cross, its longitudinal direction being within ten degrees of the magnetic meridian. It was, perhaps, situated exactly upon that meridian when the building was erected—the variation of the compass accounting for the present difference. The great entrance was in the southern end. From thence to the head of the cross, where the altar was doubtless situated, it is one hundred and thirty-two feet, inside. This, the nave of the church, is thirty-two feet in width. The short arm of the cross, or what in cathedrals is called the transept, is forty-one feet in length and twenty-three in breadth. The transept is sixty-six feet from the doorway. These measurements were made with a tape-line in a very high wind. The round numbers in feet are, therefore, only given, without noting the fractional parts of a foot.

"The walls are of great thickness, and their height is, at this day, in over half the structure, all of fifty feet. The upper edge of these walls is cut into battlements. The church, as well as the neighboring buildings now in ruins about it, was built of a stratified, dark red sandstone, such as crops out along the creek and makes its appearance on the sides of the surrounding hills. The pieces of stone do not average over two and a half inches in thickness, and are not generally over one foot in length. Each piece is of the form it had when it was broken from its native bed. We saw not a single dressed stone about the ruins. These stones are laid in mortar made of the ordinary soil from the ground immediately at hand. The roof of the church was evidently supported by beams and covered with earth, as in the churches still occupied as places of worship

throughout New Mexico. We saw no signs of an arch, nor any indication that those who planned and built the church at Abo were at all acquainted with architecture as a science. The walls over the doors and windows, so far as we could observe, had been supported by beams of wood. When these had become destroyed, those stones which were liberated above had dropped down; so that now, over each window there is a rude sort of Gothic arch, owing its form, not to design, but to accident. The wood-work of the church was evidently destroyed by being burnt. Wherever in the walls portions of beams still remain they are found charred and blackened by fire.

"The form of the church alone, proves it to have been designed by Christians. Perhaps the workmen employed in its construction were Indians. We saw a distinct mark of an axe in one of the pieces of timber, which is embedded in the east wall of the church some six feet from the ground. Saws also were doubtless used, but we discovered no marks of them. The stick of timber marked with the axe, and some beams that supported a landing at the head of the stairway which is made in the west wall, were the only pieces of wood about the ruins which were not burned so much over their surface as to obliterate all marks of tools.

"The extent of an exterior wall, which, from the appearance of the present heaps of stones, once surrounded the church and the town, was about nine hundred and forty-two feet north and south, with an average width east and west, of say four hundred and fifty feet. A large population must have occupied this town and its neighborhood, if one were to judge of the number of people by the size of the church built to accommodate them at their devotions.

"We saw few, if any, unmistakable signs that the ground had been cultivated in the vicinity of these ruins. Nor is there any good arable land, so far as we could observe, at any point nearer the Rio Grande; for uplands to be arable, in the climate of New Mexico, must

be so situated as to be capable of irrigation. The stream of water at Abo is in a deep ravine. It is very inconsiderable in point of size, and loses itself in the sand in less than five hundred yards below the springs which feed it. The adjacent country is rolling and broken, and covered with piñon and cedar. The underlying rocks are secondary red sandstone. The summits of the mesas and neighboring eminences are composed of gray limestone filled with marine fossils.

"It was nearly night when we reached Abo. There was a keen freezing gale from the northwest, and the whole appearance of the country was cheerless, wintry and desolate. The tall ruins, standing there in solitude, had an aspect of sadness and gloom. They did not seem to be the remains of an edifice dedicated to peaceful, religious purposes, a place for prayer, but rather as a monument of crime, and ruthlessness, and violence. The cold wind when at its height appeared to roar and howl through the roofless pile like an angry demon. But when at times it died away, a low sigh seemed to breathe along the crumbling battlements; and then it was that the noise of the distant brook rose upon the ear like a wail.

"In the mystery that envelopes everything connected with these ruins—as to when, and why, and by whom, they were erected; and how, and when, and why, abandoned—there is much food for very interesting speculation. Until that mystery is penetrated so that all these questions can be answered without leaving a doubt, Abo belongs to the region of romance and fancy; and it will be for the poet and the painter to restore to its original beauty this venerable temple, to rebuild its altars, and to exhibit again unto us its robed priests, its burning censers, its kneeling worshippers."

QUARAI OF THE TIWA

In describing the towns of the Tanotowa, I spoke of one community that wandered south into the Piro

Land. This was Quarai, which established itself in a beautiful valley at the foot of the Manzanos. At the time of its occupancy it was the most southern Tiwa pueblo of the Salinas region. Quarai was the seat of a Spanish mission from 1629, and contained a monastery and a church dedicated to the Immaculate Conception. According to Vetancort, it had six hundred inhabitants immediately prior to its abandonment. Between 1664 and 1669 the people of the pueblo connived with the Apache, during a moment of friendliness of the latter, to rout the Spaniards, but the plot was discovered and the leader executed. About 1674 the Apache compelled the Quarai people to flee to Tajique, twelve miles northward. The latter village remained inhabited probably a year longer, when its occupants were forced to succumb to the hostility of the Apache, and to flee to El Paso, Texas, being afterward settled in the village of Isleta del Sur farther down the Rio Grande, where their descendents have since lived. Now not a single survivor could be found. I interviewed one and heard of another in 1921. These were probably the last of the Tiwa of Quarai.

Our excavations at Quarai, extending over three seasons, resulted in the recovery of a considerable number of skeletons from the principal burial-place, which was the refuse heap in the southeastern part of the town; also in the construction of a model of the pueblo and finally in the acquisition of this most interesting historic site by the University of New Mexico and its preservation as an archæological park.

PECOS, CORONADO'S CICUYE

We have seen that the frontier strongholds were beaten down and abandoned prior to the great rebellion

of 1680. Here is one cause of Pueblo decline that does not require conjecture. The raiding bands from the Great Plains were too strong for the peaceful Pueblos. There was, however, one that resisted into the nineteenth century. This was the town of Pecos, situated in the upper valley of the river of that name, the largest eastern tributary of the Rio Grande. Pecos existed down to 1838, when its last survivors, seventeen in number, gave up the struggle and joined their relatives at Jemez Pueblo, sixty miles to the west.

The ruin of Pecos has long been one of the landmarks of the old Santa Fe Trail and is now one of the most visited ruins of the Southwest, because of the publicity it has received through the excavations of Andover Academy. The excellent reports of Doctor Kidder, who has been studying the ruins for the past fifteen years, have made Pecos so well known that no detailed description of it need be given here. He is the recognized authority on Pecos. However, in order to round out the story of the frontier strongholds, the following brief account is presented from a published report of my own.

Pecos became known to the Coronado expedition in 1540-1542. The pueblo then contained from two thousand to two thousand five hundred inhabitants, and was one of the strongest of Pueblo villages then in existence. It consisted of two great dwellings, built on the terraced plan, each four stories high and containing, respectively, five hundred eighty-five and five hundred seventeen rooms. The town figures prominently in the annals of the Coronado expedition. Two priests remained there to introduce Christianity when Coronado began his march back to Mexico. Fray Luis Descalona, or de Escalona, established there the first mission planted

in New Mexico, but he was killed probably before the close of 1542. There is then a hiatus of forty years in its documentary history. Antonio de Espejo visited Pecos in 1583, Castaño de Sosa in 1590-91, and Juan de Oñate in 1598, the last mentioned naming the pueblo Santiago. At this time Fray Francisco de San Miguel was assigned to administer to the spiritual welfare of the community as well as to that of the Vaquero Apaches of the eastern plains and the pueblo dwellers in the Salinas to the south, but it is not likely that Pecos ever became his residence. Juan de Dios, a lay brother of Oñate's colony, was the next missionary to live at Pecos, where he is said to have learned the language, but he probably returned to Mexico in 1601.

The great mission church, the ruins of which have for nearly a century formed such an imposing landmark on the old Santa Fe Trail, was erected about 1617. Pecos held its own up to the end of the eighteenth century.

Its decline, once started, was rapid; the Comanche scourge and the "great sickness" worked speedy destruction. In 1840 the town became entirely extinct and Pecos lost its identity.

At the village of Jemez, sixty miles in an air-line westward from Pecos, the last survivor of Pecos Pueblo lived well into the present century. This man, known in his native tongue as Se-sa-fwe-yah, and bearing the baptismal name of Agustin Pecos, was when I knew him a well-preserved Indian of perhaps eighty years of age. There are now living at Jemez a number of Indians of Pecos blood, but Agustin Pecos had the distinction of being "the last leaf on the tree" when we speak of the Pecos as a tribal society, the tribe having ceased to exist in fact in 1838. Agustin was born at Pecos and believed

himself to have been from twelve to fifteen years of age when the pueblo was abandoned. He returned several times to the home of his ancestors, and his memory seemed perfectly clear. He was a very honest and intelligent Indian and proud of the history of his people.

The next to the last survivor of the Pecos died at Jemez in the fall of 1902. This was Zu-wa-ng, baptized José Miguel Pecos, uncle of Agustin and probably from ten to fifteen years his senior. José Miguel was a young man when Pecos was abandoned; he was an excellent traditionist, possessed a keen memory, treasured his tribal history, and was ready to give information to those who gained his confidence.

Most of my traditionary material on Pecos was obtained from José Miguel and Agustin, and from Pablo Toya, son of the last governor of the pueblo, born at Jemez after the abandonment of Pecos; a man who was a real historian.

In the Castañeda narrative Pecos is known as Cicuye. This is probably the name by which it was known to the people of Tiguex, the village on the Rio Grande from which the Spaniards proceeded to Pecos—a people who spoke the Tiwa language. It would be natural for the historian of the expedition to use the name learned at Tiguex, where Coronado's army had been in winter quarters. The people of Isleta, who speak the Tiwa dialect and who doubtless embrace in their community some who are direct descendants from Tiguex, give Sikuyé as one of their names for Pecos. The Pecos people call themselves Pe-kúsh.

The area occupied by the Pecos Pueblo was small, embraced within the narrow confines of the Pecos Valley, extending from northwest to southeast for a distance of about forty miles, or from about five miles above the

ruins of the pueblo, to the present Mexican settlement of Anton Chico. Their territory nowhere exceeded ten miles in width and had an average width of about five miles. Their situation was economically strong; their land was productive, their water supply ample, and their proximity to the buffalo country gave them articles of trade much in demand by the tribes farther west. During a long period of peace they could not fail to prosper. But their geographical position was such as to afford little security from the predatory tribes.

These depredations began before the coming of the Spaniards. The traditions of Pecos point to incessant strife with the Comanches, who made their appearance in New Mexico with the dawn of the eighteenth century.

The story of the decay of Pecos has been told many times—best of all by Bandelier. The traditions of the "great sickness" which reduced the tribe to desperate straits early in the nineteenth century and finally led to the abandonment of the village, have been fairly well verified.

The traditionists at Jemez agreed in stating that on the day of leaving Pecos the tribe consisted of seven men, seven women and three children. They fix the date of abandonment by declaring it to have been the year following the murder of Governor Albino Perez. As that event occurred in August, 1837, the abandonment of Pecos may be definitely fixed at 1838. Thus passed the last of the frontier strongholds.

5. Sacramento and Guadalupe

As pointed out in the previous chapter, the ranges east of the Rio Grande in southern New Mexico, known as the Sacramento, Guadalupe and Organ Mountains, constitute the southernmost prolongation of the Rocky

Mountains. Whether or not this group is of the same geological age as the main Rocky Mountain range, the geologist must say. That the region constitutes an archæological province of the greatest interest can be said with certainty. Explorations around the bases and through the valleys disclose archæological remains wherever looked for. Nowhere do we find the great terraced community houses of the Rio Grande, San Juan and Little Colorado; nowhere the great mud compounds such as Casa Grande of the Gila. We miss the subterranean and semi-subterranean kivas of the northern culture areas, and the round towers so characteristic of the San Juan country do not appear in the Sacramento-Guadalupe region.

This would seem to limit the ruins to the archaic forms described in Chapter I of Part Three of this work and put down in the chronological chart of the Southwest as of the pre-Pueblo epoch. This would place the culture of the region in the first millennium of the Christian era, would indicate that the people were of the non-sedentary and semi-sedentary tribes, and leaves to them by way of domiciles the rock shelters, natural caves and early forms of village life which border upon the pit villages so numerous across the Rio Grande to the west in the Mimbres and Gila Valleys.

Our excavations during the last two years seem to confirm these suppositions. On the plain at the western base of the Sacramentos, near the towns of Alamogordo and La Luz, we have been uncovering the remains of settlements that more nearly conform to the pit-house type than to any other. The excavated rooms are clustered in villages. The indications of them found upon the surface point to no permanent superstructures. Apparently they were sunk below the surface to a depth

of from three to six feet, posts were set in the corners, and roofs of brush formed a canopy over the house as in the true pit villages. The excavations are conclusive as to the occupations of the inhabitants. That they were agriculturists, as were all dwellers in the Southwest from the earliest to the latest, is proved by the fact that they possessed all the equipment for raising and using corn that is found in every southwestern culture center. In pottery-making they had advanced into the stage of the pit villages of the Mimbres Valley and plentiful artifacts of the minor arts indicate that these people had, in certain phases of culture, advanced well into the Pueblo epoch. Ruins of the character that we have been excavating in this section are numerous for many miles along the western base of the Sacramentos and in the valleys that issue from this range and adjacent spurs to the east. We expect to find this type of house throughout the Sacramento-Guadalupe region.

Equally numerous and important are the rock shelters and natural caves of the foot-hills. No carefully planned or supervised scientific work has yet been carried out in the rock shelters and caves with the exception of that at Bishop's Cap near the base of the Organ range, conducted by Doctor Bryan, of the Museum of History, Science and Art in Los Angeles. Brief notice of this excellent piece of work has appeared in the scientific press and the work now going on gives promise of valuable results. The excavation of Conklin's Cavern yielded fossil remains of much importance and the clearing out of the rock shelter on the opposite side of this cone is disclosing cultural deposits in such relation to the fossil remains as to point strongly to the possibility of man in this region many centuries earlier than assumed in our chronological chart. Doctor

Bryan's excavations will be watched with eager interest. It may be said without hesitation that the evidence so far obtained at this site is more convincing of the great antiquity of man in the Southwest than any other that has turned up; that is, of human culture antedating the Christian era by one or more millennia. The finds in the vicinity of Folsom, New Mexico, have been widely published and the situation is receiving scrupulous attention. It is regrettable that the paleontologists have been too easily convinced of the contemporaneity of man and the extinct animals found. The same must be said of the recently announced discoveries in southern Nevada. Nothing is to be gained and much harm may result from the premature announcement of conclusions on a subject so obscure. It is easy to allege that man and the giant sloth, for example, were contemporaneous in certain sections of the Southwest or that man was a neighbor of the mammoth, or even of the still more remote dinosaur. Finding their remains in juxtaposition, however, proves exactly nothing as to their contemporaneity until we find them in absolutely inseparable relation. This has not yet been done. The nearest approach to it is to be seen in the excavations by Doctor Bryan above referred to. If the problem of contemporaneous life should be settled in the affirmative, it may prove that certain animals of the Pleistocene age survived down to an unexpectedly recent time, rather than that man existed in this region twenty or thirty thousand years ago.

These factors of uncertainty are pointed out, not for the purpose of discouraging scientific research, but exactly the contrary. Nothing can be more detrimental to science than the foregone or immature conclusion. I wish to repeat that the Sacramento-Guadalupe district

seems at the present moment to be the most promising place in the United States for investigation of the subject of early man in America.

The rich cave finds at the southwestern base of the Guadalupe range in northwestern Texas are of immense interest but of no special significance as to human antiquity. While these perfectly preserved finds, so generously placed at the disposal of archæologists by the owners, Mr. and Mrs. Alvez, may conform in many respects to the Grand Gulch, Utah, remains, upon which the basket-maker culture was established, and may to an equal extent resemble the recent cave finds of southern Nevada, there is no evidence of contemporaneity in time, or of ethnic relationship. The Aztecs are to-day using devices of the ancient cliff-dwellers of the Sierra Madre in Chihuahua, twelve hundred miles away in distance and a millennium of time. The material in the El Paso cave may have been laid down a century or two ago and similar material in the San Juan Valley two thousand years ago, and the people of the two regions be without relationship other than that they belong to the American Indian race. Such are the cultural tricks that are played upon the unwary archæologist.

For some reason, the Sacramento-Guadalupe district, now known to be one of the richest in the southwest, has been the last, with the exception of the extreme southwestern part of the Pueblo Plateau in Old Mexico, to receive attention. One may look for lively interest in this section during the next few years.

The excavations in the neighborhood of Alamogordo are yielding, in addition to the characteristic Sacramento material, an abundance of trade artifacts which clearly came from the Mimbres Valley and the Chihuahua Basin.

Chapter III

THE LAND OF CLIFFS AND CANYONS

1. The San Juan Country

The San Juan Valley is the northernmost of the sub-areas of Pueblo culture. It occupies the southwestern part of the state of Colorado, the southeastern part of Utah, northwestern New Mexico and northeastern Arizona. The trend of the valley is from east to west. The San Juan River is the most important northern tributary of the Colorado.

After emerging from the high mountains of Colorado, the course of this river lies through a semi-arid country that can now be rendered productive only by irrigation. Its tributaries are small and for the most part of intermittent flow. Those of the north originate in the mesas and low mountain ranges that limit the northern watershed to an average width of not over forty miles. The south side of the basin is characterized by huge red sandstone table-lands, the flat tops of which are covered with stunted piñon and juniper, the sides presenting bold picturesque escarpments, and the whole cut into fragments by gorges which vary from a few feet to upward of a thousand feet in depth. For a full and reliable description of this section the reader is referred to the excellent reports, maps and drawings of Mr. W. M. Holmes in the *Reports of the Hayden Survey, 1875-76.*

South of the river, the country is broken by a few short detached mountain ranges, but it is for the most part an expanse of arid country, known as the Navaho Desert. This side of the San Juan Basin may have an average width of one hundred miles. With the excep-

tion of the narrow flood plain of the river, varying from a few yards to a few miles in width, the areas of fertility are insignificant. It is a desert wilderness, yet within its confines the largest Indian tribe still existing in the United States, the Navaho, numbering perhaps forty thousand souls, the Beduwi of the American Desert, find subsistence. Their chief industry is the making of the famous Navaho blanket. This article made from the wool of the native sheep, has, because of its great durability, artistic design and beautiful coloring, become one of the most popular of all forms of primitive hand-work.

There are no southern tributaries of the San Juan that carry water except during flood season.

The San Juan drainage is the northern frontier of Pueblo culture, though this is not an absolute limit. The ancient population was large and overflowed its natural boundaries. Extensive Pueblo remains exist west of the Colorado in the Virgen Valley, and Professor Byron Cummings has reported cliff-houses one hundred fifty miles farther north. I have found Pueblo remains near the Colorado-Utah state line, one hundred twenty miles north of the San Juan. Pueblo pottery and house remains have been reported from as far north as forty-one degrees, the latitude of Salt Lake City.

However, all these are remains of scattered settlements. They conform roughly to the San Juan type and doubtless represent sporadic overflow from that region. No well-developed focus of ancient population existed north of the San Juan Basin. All the remains of antiquity in this basin are pre-historic. Of all the large ancient population, not a soul remained when the valley was first seen by white men.

Exploration of the northern watershed of the San Juan may begin north of Mesa Verde. This is the

gateway to an ancient region of the greatest interest. In every direction there are Pueblo ruins, large and small, and round towers, single, double and triple walled. These are all in an advanced state of decay. The largest ruin in the valley is at Aztec Springs nine miles south of the town of Cortés. The region of greatest interest is down the McElmo about forty miles to the west. A large ancient population occupied this valley and its tributaries. The heart of the district is about the junction of the Yellowjacket with the McElmo.

Some striking differences are noticeable between these ruins and those of Mesa Verde, which are to be described later. A different system of placement prevailed here. On the Mesa Verde an entire community occupied buildings within the caves. In the McElmo district the houses in the caves are small and insignificant. The main village is found on the top of the rim-rock, nearly always at the head of a canyon. The town usually consists of several buildings closely grouped together on the edge of the precipice, some small cliff-dwellings below under the rim-rock, and towers, both round and square, perched on high points difficult of access in the canyon in front of the village. Similar towers occupy commanding points a few hundred yards below, usually at the first canyon junction. This system of defense is followed throughout the entire districts, and in comparison with Mesa Verde illustrates how different communities worked out their problem of defense.

West of the McElmo district about twenty-five miles in the state of Utah, is Montezuma Canyon. In this, and in every little valley to the west for thirty miles, there are countless ruins. This was a pueblo rather than a cliff-dwelling culture, nearly all the buildings of the

latter class having been either granaries or lookout posts. A few strongly fortified hills are to be seen, but the pueblo ruins are for the most part situated in the open on level bottom-lands. They were not of the great size to be seen in other localities, but were mostly small houses thickly scattered over the alluvial valleys which in ages past must have been highly productive in order to support the population that existed there. Throughout the Montezuma district the circular subterranean kiva is found in large numbers.

Still farther to the west, down the valley of the San Juan, in the Cottonwood, Grand Gulch and White Canyon region, is one of the most interesting districts in the Southwest from an archæological standpoint, while for scenery it is even more distinguished. This district extends west to the Colorado River, and is one of the most picturesque in America. Here the enormous fragments of the "red beds" of Jurassic sandstone that have withstood the erosion of ages, take such weird and fantastic shapes as to become objects of veneration to the Indians. Such are the two imposing figures, sculptured by nature, overlooking the San Juan Valley at Bluff, Utah. They are nearly three hundred feet high and are known to the Ute, Navaho and Apache as "The Twins."

In Grand Gulch the gray sandstone is denuded of the formerly superimposed "red beds." This gorge is fully one thousand feet deep. In the bottom is a narrow strip of alluvial land and in the canyon walls the remains of cliff villages occur along a distance of sixty miles.

Most remarkable of all is White Canyon. Here are the stupendous "natural bridges" of Utah. They occur in the gray sandstone, a group of three vast arches that have no parallel. The Edwin (I retain the original names given by the discoverer) is one hundred ninety-

four feet wide; its height one hundred eight feet. The arch of stone forming it is only ten feet thick. The Augusta, completely spanning the gorge of White Canyon, is two hundred sixty-eight feet wide and two hundred twenty-two feet high. A four-track railway could use it for a bridge. Its only rival in the world is the Rainbow Bridge at the base of Navaho Mountain, south of the San Juan in Arizona. The Rainbow is a somewhat greater span than the Augusta, but is far from being as perfect a specimen. These bridges have been made National Monuments. Hundreds of cliff-dwellings occur in the gorges near by.

In this region of enchanting scenery the archæologist finds one of the most interesting developments in all southwestern culture history. There are in the cliffs and gulches about the same cliff-dwelling remains that we have found all the way along the northern side of the San Juan River. Excavations as early as the 'eighties and 'nineties disclosed remains of a basket-making people who appeared to be different in many respects from the ancient Pueblos and cliff-dwellers and whose remains were found quite uniformly underlying the deposits of the cliff-dwellers. So far as I know, George H. Pepper, field archæologist for the Hyde Exploring Expedition, was the first to bring this interesting culture into the scientific literature of the Southwest. He gave to the vanished people of this culture the name, basket-makers.

Many others explored the region and wrote more or less accurate descriptions of this group of primitive people who seem to have drifted into the lower San Juan Valley at a very early time. It fell to Kidder and Guernsey to make the first intensive study of these remains and to establish upon their findings there a

sequence of cultural development which seems most logical and which was supported by ample evidence. Their arrangement of the stages of development which they felt were conclusively proven was as follows, beginning with the most recent and extending backward in time and downward through the archæological strata:

1. Sites with well developed pottery (Pueblo ruins)
2. Sites with less well developed pottery (pre-Pueblo ruins)
3. Sites with crude pottery (post-basket-maker ruins)
4. Sites with no pottery (basket-maker sites)

This perfectly natural sequence will probably be found in many other districts of the Southwest. It would be hardly possible for any people in the development of such an important activity as pottery-making to learn the art without going through these stages. One can have only the highest admiration for the patient and convincing work of these two investigators in these complex deposits, but I shall always cherish a grudge against them for fastening upon the science of archæology in the Southwest such terms as basket-makers, post-basket-makers and pre-Pueblo, bringing into a science that is badly enough off in its nomenclature confusion that is increasingly confounded. I have been able to escape the difficulty only by keeping out of it, hoping that eventually in some way or other it would be untangled. In various places throughout this work I have pointed out the inconsistencies of this nomenclature and so shall not repeat the operation, except to point out again that the art of basket-making has an unbroken record from the earliest human occupation of the Southwest down to the present time and that all peoples that preceded the Pueblos in the Southwest were of necessity pre-Pueblo.

The basket-making people of Grand Gulch, White Canyon and other northern tributaries of the lower San Juan were non-pottery-making, except for the crudest possible stage, built no permanent houses so far as can be detected, excelled in weaving and textile arts, buried their dead in cists, were of the narrow-headed type, and did not cause the deformation of the skull as did most of the Pueblo peoples by binding the infant upon the cradle-board. There would seem to be no reason for looking upon the basket-making people of this limited area as having any tribal connection or ethnic relationship with basket-making groups found in southern New Mexico. The modern basket-makers of California bear some resemblance culturally and physically to the archaic Grand Gulch people. In the light of this fact and in the absence of any definite knowledge as to how far back in antiquity the California tribes were practising this art in which they have always excelled, one wonders if a small group may not have detached itself from an early California basket-making stock and wandered east into the lower San Juan Valley.

The change in head form from the dolicocephalic basket-maker of the archaic epoch to the brachycephalic type which prevails in varying percentages among the Pueblos, ancient and modern, has a significance which I suppose no archæologist can with certainty explain. Some hold that such changes in head form can take place within a very few generations; others, that a very long time would be required to bring about appreciable modification. Change in the habit of carrying the infant would be a much simpler matter. The mode that caused the occipital flattening of the skull might be taken on or abandoned in a generation or two. The

phenomenon is of little service in determining cultural relations.

It would seem that the basket-making people of the lower San Juan must have exposed their dead to the desiccating influence of that exceedingly dry climate, for nowhere else north of the southern rim of the Pueblo Plateau in Old Mexico are the bodies of the dead so thoroughly mummified.

Crossing the San Juan to the south from the country just described, one is in the region of Navaho Mountain which is the most characteristic geographical feature of the southern lower San Juan area. This is one of the sacred mountains of all of the southwestern tribes from whose homes it can be seen. It rises from barren desert plains through a succession of mesas that have eroded into all sorts of fascinating shapes up to real mountain heights. On the south side is the famous Rainbow Bridge above mentioned.

The conditions existing in the canyons and mesas around Navaho Mountain brought forth considerable variation in San Juan culture. There are noticeable differences in house construction, especially in the form of the kivas, and in the pottery so great a variation occurs as to warrant a specific name. Professor Byron Cummings, who has done more work than any one else in this region, gave it the name, Kayenta culture. I regret that he did not name it the Navaho Mountain culture.

Proceeding back up the San Juan on the south side of the basin, the canyons of the Chin Lee are entered in northeastern Arizona. Here, in two of the most beautiful gorges of the Southwest, Canyon de Chelly and Canyon del Muerto, is another center of ancient cliff-dwelling population. The region is isolated by

many miles of inhospitable desert. Its cliff-houses are not unlike those on the northern tributary of the San Juan and present no new features. The culture was originally of the San Juan type but the archæological remains are heterogeneous in character. One reason for this is to be found in the fact that certain Hopi clans detached themselves from their villages to the south within the historic period and came here to live, intermarrying with the Navaho. This brought a new element into the archæological situation which, however, is easily separable from the archaic.

The above accounts of the principal centers of community life along the San Juan will serve to give the general picture of ancient conditions that once existed in this great valley. For the more detailed picture, the Mesa Verde and its ancient cliff towns will be described.

2. The Climax of Cliff-Dwelling Life

The plateau which bears the name of Mesa Verde lies in the extreme southwestern part of Colorado. That part of the state is reached from either the east or north by way of a stupendous mountain barrier, the San Juan range, which in scenery rivals the Alps. As looked upon from high points which surrounded it, Mesa Verde springing from the level Montezuma Valley is seen to be aptly named, the *Green Table-land.* It presents the appearance of an unbroken plain sloping gently to the south and covered with grass, cedar and piñon. It is only on nearer approach that the network of deep gorges with which the surface is split in hundreds of precipitous fragments becomes visible. From the surrounding valley on the north and west one sees the bold escarpments of sandstone rising almost vertically to a height of from one thousand to two thousand feet.

The earliest explorers of the Southwest learned nothing of that which was eventually to make this region so widely known; that is, the imposing remains of ancient civilization hidden in the fastnesses of Mesa Verde. Father Escalante who crossed the valley to the north in 1776 saw the group of ruins twenty-five miles away at the head of the Yellowjacket near the great bend of the Dolores River, but makes no mention of the Mesa Verde. It was a hundred years later that the reports of Holmes and Jackson first directed attention to the cliff-houses of the Mancos Canyon. The greater ruins in the heart of the Mesa Verde were later made the subject of a monograph by Nordenskiold who spent a season in their study. In the winter of 1906 the Secretary of the Interior ordered that an archæological survey of the Mesa Verde be made and a report prepared concerning the condition and historical value of the ruins thereon; the object being to determine the merits of measures pending for the preservation and protection of these ruins. I was detailed for this task by the Secretary of the Smithsonian Institution and, based upon the report presented, the Congress of the United States in June of the same year passed an act creating the Mesa Verde National Park.

After Mesa Verde was made a National Park, the excavation and repair of its ruins became the task of the Smithsonian Institution. Dr. J. Walter Fewkes, for several years Chief of the Bureau of American Ethnology, became the Director of the excavations. With the exception of Balcony House, excavated by the School of American Research with funds furnished by the Colorado Cliff-Dwellings Association, Doctor Fewkes personally directed all the major excavations of the Mesa Verde. His work here was the most ex-

tensive and thorough ever undertaken and carried out in American archæology. His reports are the classics on Mesa Verde. To him must be given the credit for the great scientific work that the government of the United States has done on our only archæological National Park. To Mr. Jesse L. Nusbaum, the present able superintendent, is due the splendid system of roads and management that has made this one of the nation's most popular recreation places. He has made it more than that—an educational institution.

The cliff-houses in the Mesa Verde district are to be numbered by hundreds though many have been completely destroyed. In the open, on the Mesa tops and in the valleys, one finds remains of watch-towers, small houses, and entire villages now reduced to mounds. Those built in caverns and on ledges high up in the canyon have been protected from the elements and in a measure from vandals so that many are in a good state of preservation. The ruins range from single rooms probably used as granaries, and houses of three or four rooms, the home of a single family, up to towns which may have housed from four hundred to five hundred people. These are veritable cliff castles, three, four, even five stories high, displaying great skill in construction. The finding of buildings with walls of enduring masonry on precipices that are almost inaccessible to us is a source of constant wonder to the explorer. While the majority of cliff-houses of Mesa Verde have been explored, there are yet many to be entered for the first time by white men.

It will be sufficient to describe here the leading features of one or two ruins. For this purpose none will be better than Cliff Palace, of all its kind the most remarkable. It is situated in a short branch of Ruin

Canyon. From a high point to the south, one looks down into the ruins of an ancient town with round and square towers, store-houses, dwellings and places of religious observance. It completely fills a large cavern well protected from the elements and strongly defended. From the point of approach a trail descends to the ruins. The plan made by our expedition in 1907 shows the outlines of one hundred five rooms on the ground floor. The original number of second-, third- and fourth-story rooms must remain a matter of conjecture. According to my early estimates, made before excavation, Cliff Palace was the home of not less than five hundred people. The plans and estimates of Doctor Fewkes are the most reliable that have been made.

We see in the construction of Cliff Palace great proficiency in building. The material used is gray sandstone. This was dressed with stone tools, the marks of which may be plainly seen. When stones of irregular form were used the crevices were filled with spauls or chips of the same material. The walls were then plastered with adobe mortar.

In the construction of ceilings and floors, these were cut with dull stone tools. Heavy beams were first laid across the walls. Upon these were placed poles of smaller size. These in turn were covered with small sticks and brush or cedar bark and over all was laid a covering of earth.

Two forms of doorway are seen in these buildings. The most common is the small rectangular opening, averaging about forty inches high by fifteen inches wide. The other is the so-called tau-shaped door which is of the same form except for a narrow extension at the bottom, usually about twelve inches deep by six wide. This form of door occurs over the entire pueblo region.

Windows are very small openings, usually rectangular and only a few inches square.

It is interesting to note the skill with which every possible means of defense was used. One of the most ingenious of these devices is the wall which closes the approach to Balcony House. The trail leading down from the top of the cliff passes through a deep crevice. This was closed by a heavy wall of stone, only the small doorway being left for entrance and exit. As all other trails to the village could be easily made inaccessible and a spring of pure water exists in the cavern back of the houses, this town was impregnable so long as stores of food held out.

In the plan of Cliff Palace are seen the outlines of many circular rooms or kivas. Those in Cliff Palace may be taken as the type for the entire San Juan culture. The room was usually circular. Occasionally one is found somewhat oblong in form. The chamber was almost wholly subterranean, though in some instances we find the roof a few feet above the ground. In one of the few in which the roofs remain intact, we note the ingenious method of interlocking the heavy timbers so as to give to the roof the shape of a flattened dome. Over these timbers a covering of sticks and fine brush was placed and lastly the roof was covered with earth and plaster. The entrance was through a trap-door in the roof. This was usually placed a little to one side of the center. A ladder descends to the interior. The inner walls are built of stone and here we find the best workmanship that these people were capable of. The masonry of some of the kiva walls would be considered excellent for the present day. The deep recesses in the walls a few feet above the ground are a common feature in all kivas of the San Juan Basin. These recesses are

generally six in number. The altar was placed to one side of the center of the room. Idols and prayer-sticks and offerings were placed upon the altar. In front of it toward the center of the room is to be seen the circular pit called the sipapu.

That these subterranean chambers were used for ceremonial purposes is known from the fact that they survive in the villages of the Pueblo Indians where their uses and symbolism remain unchanged. For this reason I do not accept Doctor Fewkes's identification of the altar as a "deflector," nor do I believe that the tunnel and shaft served as a ventilator except accidentally.

Among the more striking ruins of Mesa Verde, after Cliff Palace, are Spruce Tree House, Balcony House, Square Tower House, New Fire House and Sun Temple, all with the one exception mentioned above made widely known by the excavations of Doctor Fewkes.

If one can now restore to the ruined houses, sanctuaries, caverns, trails and fields of Mesa Verde the people who once peopled them, it will form one of the most extraordinary pictures of human life that the world has ever witnessed.

3. Master-Builders of the Desert

Some centuries ago, a group of communities lived along a small waterway on the western slope of the Continental Divide in latitude thirty-six north, longitude one hundred nine west, a place that is now known as Chaco Canyon, New Mexico. No word of history exists concerning them. No convincing tradition has been found. The name by which they knew themselves and were known among their contemporaries is lost utterly.

If the language they spoke still exists we do not know of it. Of all the peoples of the ancient world, whose achievements have survived the ages, none have more completely attained oblivion. It is hoped that somewhere the blood, language and cultural potentialities of these remarkable people survive to become available in the evolution of the coming American race, for it was virile stock.

A strip of land ten miles long by a mile wide embraces the area that these communities inhabited. It is probable that they never cultivated more than three thousand acres of land at any one time and never numbered more than ten thousand inhabitants, but they left as their racial autograph evidences of great cultural power. In enduring architecture for residential use, indicating highly organized religious life and social structure, they attained to levels not surpassed by the architects of the ancient world. The master-builders of antiquity in Asia, Africa and Middle America excelled them in temples and mural embellishment but not in substantial residence building. In ceramics and some minor arts they reached a plane worthy of the greatest of their contemporaries.

The ruins of twelve large community houses, numerous small sites, and the accessories of community life, such as sanctuaries, cemeteries, stairways, trails, ditches; the evidences of economic resources, such as fields, plant and animal food, fuel and building material, together with cultural remains of industrial, esthetic, social and religious character, constitute the material available for study. Additional light may be obtained through the study of the somatology, language and culture of tribes inhabiting adjacent regions—Pueblo, Ute, Piute and Apache.

Whoever reaches Chaco Canyon will see something of the desert. It is fifty miles in any direction to a living stream. From any point of approach the desert barrier must be crossed. This is not a formidable matter now, with autos to take the place of weary beasts. In the old days one toiled across on horseback or by wagon, and it was a march for seasoned veterans only. It was safe only when accompained by a trusty Navaho. These nomads of the Southwest know their desert. Every spring, water-hole and rock-shelter is charted in their brains. They have matched their wits against scorching winds and smothering sandstorms and wintry blasts for centuries and have survived and made of the desert a hospitable home. It is no exaggeration to say that with all its seeming hardness they love it. You hear them singing on the desert trails with as wild a joy as ever did Swiss mountaineer or Alsatian peasant.

To the white man, until he had fallen under the spell of the desert, it was anything but inviting. Food was scarce always. The iron ration was the customary thing. Cold springs existed, but only the Navaho knew where. Even with this help it often meant long days of hard riding to reach water. But it must not be supposed that the Chaco region is always a place of burning sands and suffocating dust storms. Like all other deserts it has its times of unearthly charm. The scene invites reflection upon the exchanges made in coming from metropolitan civilization into this. For the morning rush to business in the subway, the sunrise stroll to work along a desert trail; for the orchestral din at meal-time, the quiet, unbroken by a real noise within sixty miles; for the movies, a pastoral of flocks rounding into the corral against an afterglow on red-brown cliffs; and for the great white way, an indescribable moonlight over calm

desert canyons. The majesty of silence and space that rests upon the land suggests the vastness in which Eternal Mind organizes the energies of the universe. The human spirit so immersed for generations must live in a state of freedom that is unknown in crowded centers of population. Humanity, in this environment for generations, would probably be content without rapid movement, instantaneous communication, the measurement of time into fractions of seconds, the incessant shock of machinery, political campaigns, class hatreds, industrial revolutions and world wars. Space is the first requisite of mental and spiritual tranquillity. It is reflected in the imperturbable nature in the Indian race whose psychology was established in the freedom of limitless plains and deserts, forests and mountains. Contrast the history of the European mind—the crowded races perpetually fighting for the limited advantages of valleys and seas and natural boundaries. Taking by violence, holding by force, organizing deception to supplement physical might, living through the centuries under the shadow of impending conflict with crowding neighbors—Europe could hardly have had a different history and the European race could not have been other than it is—preeminent in war, industrial strife and cunning propaganda, with such tendencies as murder, stealing and lying pervading all social, political and international life.

The mystery of the desert reaches its climax when, in the center of this area a hundred miles square without a flowing stream of any sort, we come upon a group of ruins such as Egypt and Mesopotamia and Asia Minor and Middle America have been supposed to monopolize. These are the long-deserted homes of the ancient communities which W. H. Jackson in 1877

declared to be "preeminently the finest remains of the work of unknown builders to be found north of the seat of the Aztec Empire in Old Mexico," an opinion which time has more than justified.

The Chaco Canyon from a scenic standpoint is not impressive. It has not the picturesque beauty of the Rito de los Frijoles, nor the color of Canyon de Chelly. One readily thinks of a dozen canyons in the Southwest to which it is not comparable in many respects. In that of human associations, however, it is without a parallel. Silence brooded here for ages, then was broken by the voices of humanity for some centuries, and then again the silence, more poignant than that of wastes that have remained for ever uninhabited. The panorama of those human centuries rolls before the mind; another trial at life and another failure. Generally it has been man's privilege to transform the earth at will. Mountains are honeycombed with mines; plains and forests have yielded to agriculture; cities have sprung from primeval swamps. Even the sea and air have been brought into the service of commerce. Here for a few centuries man wrought these monuments to his vast endeavors, but on the country made no lasting impression. The desert remains unmastered.

The Chaco is nowhere more than a mile wide. Its channel is eroded through the sandstone cap, which covers the entire region to a depth of more than two hundred feet. Its level floor of rich black soil, of high fertility when watered, is cut by an arroyo twenty to thirty feet deep which is always dry except in rainy seasons when there may come a flow for a few hours at a time, or even a few days, from the slopes of the Continental Divide. Lieutenant Simpson speaks of it as a flowing stream in his Journal of Colonel Washington's

expedition in 1849. The summer of 1921 was one of continuous rains for weeks so that there was again witnessed, for the first time in many years, a steadily flowing stream in the Chaco. This was repeated in the summer of 1929.

The Chacra Plateau, treeless except for stunted cedar and piñon and a few gnarled pines that show long struggle for existence, has an average elevation of six thousand five hundred feet. It is marked by shifting sand-drifts, broad dry washes, plains sparsely covered with grass and the characteristic sage-brush of the Southwest. There are some rattlers, adders and gopher snakes. Small flocks of sheep and goats graze in and about the canyon. There is little to attract the permanent settler. The trader has come and gone. The foreloper has been here, has felt the pressure of impending civilization—a neighbor or two coming in thirty to forty miles away—and sought greater solitudes. Two or three Navaho families live in the ten miles of canyon here considered or in little side canyons near the trickle of water. That is the extent of the population to-day. Here are the ruined houses—enormous community structures of stone—which sheltered thousands of people in times long past. Here are their abandoned fields, irrigating ditches, sanctuaries, stairways, picture writings, graves, relics of life's activities—wrapped in the silence of ages.

From an eminence to the south it can all be seen. The view must have been an inspiring one in the ancient days, as it is now one to awaken profound awe. Bonito, the beautiful, foremost among the towns in point of size, occupies the center of the picture. It was not so beautiful as its neighbors, Chetro Ketl and Pueblo del Arroyo, but its size, the sweep of its curving walls, the

variety of masonry, the evidences of development through long periods make it a most impressive sight. Chetro Ketl, the Rain Pueblo, with its fine curving façade, inner towers, immense sanctuary within its court, and a half-dozen adjacent smaller structures must have been one of the most striking buildings in ancient northern America. The site of Chetro Ketl almost exactly equals in extent that of the palace site at Knossos in Crete. Each covers about six acres. To the left of Bonito lies Taba Kin (Pueblo del Arroyo), in the foreground the great sanctuary of Rinconada, and on the northern sky-line a mile away looms Pueblo Alto, traditionally the house of the Great Chief. It is a panorama of ruins that recalls the most noted places of antiquity in the Old World.

Let us note the location of Chaco Canyon and consider the relation of these communities to their contemporaries in the ancient southwestern world. Consult the map, showing the distribution of sedentary population in the centuries of great building activity antedating the coming of Europeans to America. Recall first that the Pueblo Plateau was composed of five sub-areas which correspond to the principal drainage basins of the region, *viz*: the Rio Grande on the east side of the Continental Divide, the San Juan, Little Colorado and Gila on the west, and the inland Mimbres-Chihuahua Basin.

The groups of population that are indicated may be considered contemporaneous. This must not be taken to mean exactly synchronous periods, but construed in the new historic sense in which chronology has become less important and evolution the dominant factor in human history. A difference of a century or two in time is not taken into account in this use of the term contemporaneous.

Chaco Canyon is in the San Juan drainage near the southern rim of that basin, in northwestern New Mexico, one hundred miles in an air line slightly north of west of the capital of the state, Santa Fe. It is sixty miles north of the Santa Fe railway at Thoreau, seventy south of the Denver and Rio Grande at Farmington, and one hundred and fifty miles northwest from Albuquerque. These are the principal points from which the place may be reached by passable roads.

In the days of the Chaqueños, neighbors were far apart. To the northwest a hundred miles were the cliff-dwellers of Mesa Verde; a hundred miles slightly west of south were the forebears of the "Seven Cities of Cibola," the ancient Zuni towns. Within this circle were numerous minor settlements, as those along the San Juan seventy miles north, Canyon de Chelly, fifty miles west, and isolated outposts of small population here and there in every direction. About a hundred miles west were the ancestors of the Hopi; the canyons on both sides of the lower San Juan Basin were inhabited by cliff-dwellers; the Little Colorado Valley was the seat of many villages. In the Rio Grande drainage the Pajaritan communities were flourishing, out of which, with accretions from without, developed such settlements as Jemez, Taos, Pecos and Gran Quivira. In southern New Mexico the people of the Mimbres lived, and along the Gila almost from its headwaters in New Mexico to its mouth in Arizona were settlements of cliff-dwellers when geographical conditions permitted; and mesa and valley towns like Casa Grande in the level flood plain. Three hundred miles away in Chihuahua were the populous districts of Casas Grandes, Cave Valley and the cliffs and canyons of the headwaters of the Yaqui. All these may be considered the contemporaries

and cultural cognates of the Chaqueños. It may be reasonably supposed that one thousand five hundred miles to the south on the Mexican plateau the pre-Aztecan (Toltec) towns were flourishing; that in Central America the earlier Maya communities of Yucatan and the temple precincts of Guatemala and Honduras were past their prime and the late Maya flourishing, and that in far-away Peru the pre-Incas were running their course.

It must be remembered that chronological exactness is not claimed for the above suppositions. It is an impression gained by a study of all these places. That there was an epoch of great building in America from Colorado, Utah, Arizona and New Mexico to Peru, extending over several centuries and finished long before the European invasion is an hypothesis that is advanced with some confidence. It assumes that the period originated with the establishment of the sedentary communities over this vast region, all of which invited this mode of life as the great plains with their countless buffalo herds, the temperate forest and mountain areas with abundant game and fish, and coast regions with bountiful resources of sea food, would not. Where subsistence was derived mainly from the soil, and corn was the chief product, it became a matter of vital interest to the people to secure land in permanence and insure its water supply and build permanent structures for residence, defense and religious practises.

There is a similarity of resources throughout this entire region. It occupies the cordillera, with its principal foci of population in high altitudes with the exception of where the continent narrows down to the connecting strip between the two Americas, and the Maya built their towns as far down the slopes as sea

level. From its northern to its southern extremities corn was a common factor of cultural evolution. With the exception of the mid-tropical region it was necessary to farm by irrigation, rainfall being too unevenly distributed over the seasons to insure germination, growth and maturity of corn and other food crops. The conditions of climate and subsistence were sufficiently alike to produce throughout a general type of social structure, discernible in the building of the towns; and a religion based upon the Indian's view of nature which was practised with great zeal. Pottery-making and weaving of fabrics were arts that were generally cultivated.

So a building culture came into existence in localities that invited permanence. Students of southwestern, Mexican, Central American and Peruvian archæology tentatively assign to the civilizations under investigation an antiquity of from one to two thousand years. The former estimate is the one to which I have long adhered. During this epoch the energies of the people were thrown into building, not altogether out of need for housing but as a development of religious activity. For example: in the town of Chetro Ketl, now being excavated by the School of American Research and University of New Mexico, the indications are that not less than fifty kivas will be uncovered. From the top of the pyramid of the sun at Cholula, Mexico, the sites of not less than ninety temple-pyramids may be seen. The period was far into its decline when America was invaded from Europe. This decay would have been easy to account for had it set in after 1492. But the movement culminated centuries before. It would seem that it simply ran its course and passed naturally into decline as such exuberance usually does.

In Chaco Canyon the range of activity was necessarily small, so that energy not employed in food production went into religious ceremonies, building and ceramic art, all closely integrated. The result was a piling up of architectural monuments such as no other time has witnessed. Lieutenant Simpson estimated that in the construction of Chetro Ketl not less than thirty million pieces of stone had been quarried, transported, shaped and laid in the walls. We now know that he might more accurately have made his estimate fifty million, so much more of the town being buried than he supposed and in a great part of the walls there being an average of eight hundred pieces to the square yard instead of the four hundred fifty counted by him. In addition to this, the thousands of logs, poles, and slabs that had to be cut in distant forests, transported by man power, prepared with stone tools and built into the structures; the tons upon tons of mortar that had to be made—altogether it represents a prodigious task for the rather small population of Chetro Ketl. This, it must be remembered, was repeated proportionately in each of the large communities of the Chaco Canyon, and an unknown number of small villages. It was no unwilling work under the lash of priestly or kingly taskmasters; the American Indians were never so ruled. It was the spontaneous impulse of a virile people, comparable to the heaping up of great mounds far in excess of actual needs, by insect communities. Other examples might be pointed out of the excessive activities of the human species as the building of the earth mounds of the Mississippi Valley, the Egyptian pyramids, the Great Wall of China and the European cathedrals of the Middle Ages. A parallel to it is seen in the present-day piling up of wealth beyond all possible needs.

The Chaco Canyon presents a concentrated group of problems. Except for the necessary study of environmental conditions, the search for traditions, and comparative culture studies among tribes in the surrounding country, the area of investigation is only ten miles long and a mile wide. This omits three outposts, five, ten and fifteen miles distant respectively.

There was naturally great homogeneity in culture throughout this little district. Doubtless all spoke the same language. While each village had its own individuality, as shown in the building of the towns and practise of ceramic art, all evidence points to identity in religion, social structure, symbolism and ordinary customs of life. No cross-currents of alien culture are discernible. On the contrary one gains the impression that a single tribe of people occupied this little valley, grouped themselves in community centers, availed themselves, with exceptional intelligence, of the resources about them, held their own against all invaders, developed through the stages of community life, with agriculture and hunting as the chief occupations of subsistence, grew physically and intellectually vigorous, and manifested its virility in unusual social, esthetic and religious activities—conspicuously in the building of great community structures and religious sanctuaries which challenge the admiration and constructive ability of modern times. One seems to be studying a people that matured its culture without serious interruption, that ran its course to the summit of its civilization, and then went into oblivion. Evidences of decline such as one sees in modern towns or pueblos in New Mexico and Arizona are not visible, though the stages of growth are clear. In the Rio Grande Valley we have seen communities die a natural death, the population shrink down

to the last man as at Pojoaque. Almost the same thing occurred at Pecos where a once powerful and populous town dwindled in three centuries to seventeen people and was then abandoned. We are thus familiar with the appearance of a decaying Indian town and have a basis in actual experience for believing that nothing of this kind occurred in Chaco Canyon. It looks as though abandonment came at the full tide of life, though there are no signs of sudden destruction. Signs of reoccupation are numerous.

It must be understood that these impressions, gained after some years of work in this interesting region and comparison with other southwestern groups, ancient and modern, are by no means final but await the results of further study.

The ancient communities of the Chaco had one principal focus of population, concentrated within a radius of half a mile. To this place it may be proper to apply the term *town*. We have no name by which to designate it as a whole. Its component units will be described under the names by which they are best known, some of which are Spanish, some Navaho, some of unknown origin. Small village sites remain nameless.

Pueblo Bonito (*Bonito,* beautiful) has long been considered the most important ruin in the Chaco region, if not in the United States. Certainly it is the most famous. Its excavation by the Hyde Exploring Expedition from 1897 to 1900 brought it into note. Because of the later excavations by the National Geographic Society more of it is in sight than of any other ruin and it has usually been the one selected for description by writers. In the great days of the Chaco it was not distinguished among its neighbors for its beauty. Several others surpassed it in this respect. A glance

at its ground plan shows it to have been without unity in design. It grew to its great proportions by successive additions that did not conform to any established plan. Its general form is that of a capital *D*. Its long diameter is six hundred and sixty-seven feet; the shorter axis three hundred and fifteen feet. It varied in its different parts from the one-story southern façade to five stories in height along its northern side. The sweep of its curving wall is over eight hundred feet in length, and is still standing thirty feet high in places. About every style of masonry known to the Chaco is found in the walls of Bonito. Thirty-two kivas have been found in the course of the excavations, all in the interior of the building. Upward of five hundred rooms were excavated and mostly refilled by the Hyde Exploring Expedition. The Geographic Society cleaned out the greater part of the building and repaired it.

The excavation of Pueblo Bonito by the Hyde Exploring Expedition, 1896-1900, laid bare many variants from the two conventional forms of rooms, rectangular and circular; these aberrations being not a result of design but incident to the unplanned growth of Pueblo Bonito at the hands of successive builders. Mr. George Pepper, Field Director of the Hyde Exploring Expedition, described some of the surprising finds that stamped the Bonitueños as a people much out of the ordinary as, *e.g.,* in a single room one hundred fourteen cylindrical jars of a type found nowhere else in the Southwest; in another, among a great number of interesting articles, a cylindrical basket covered with a mosaic of one thousand two hundred and fourteen pieces of turquoise; and in another, the remarkable ornaments of jet inlaid with turquoise, frog, tablet and buckle, which are among the treasures of American archæology.

Bonito is only seventy feet from the canyon wall which here is a vertical rock, one hundred feet to the top of the first ledge. At this point, as in many other places along the canyon wall, a huge wedge-shaped mass of the sandstone has become detached by erosion. This towers threateningly balanced over Pueblo Bonito. One vast section of it has been thrown down at no very remote time, breaking into masses many tons in weight, some of which were cast perilously near to the pueblo walls. One can imagine the terror this must have caused if the place was inhabited when the shock occurred. The same thing has been happening for centuries in this canyon and will continue as the work of nature proceeds. Small villages against the cliff lie under these fallen masses, whether covered before or after desertion no one can yet say. Herein may lie the secret of the abandonment of Chaco Canyon by the ancient people. They were not only prudent, but superstitious. It required mighty forces to cast down these great rocks. The Indian would readily sense the displeasure of deific powers in such a disaster, and when so convinced, the works of centuries would be abandoned in a day.

A ledge of masonry reenforced with timbers was built under the balanced rock back of Bonito. It is often surmised that this was a childlike attempt to keep the cliff from falling; a device that would have no influence whatever in holding up that vast weight. The Navaho evidently so believe and from time immemorial have called the place Sa-ba-ohn-nei (Place Where the Rock Is Braced Up). But the wise Bonitueños who knew enough to build stone walls that would stand through many centuries of exposure to the elements made no such mistake in judgment. These rock masses are eroded to the danger-point by water and wind undercutting them

in the soft strata at the base. Protect them from such erosion by shoring up with solid masonry and the danger has been obviated in exactly the same manner that we stop the deterioration of a heavy wall by shoring up at the base with concrete.

The nearest neighbor to Pueblo Bonito was Pueblo del Arroyo, an average city block to the west. These two may have constituted one town. The two parts are but little farther separated than are the two halves of the modern pueblo of Taos. It has some very beautiful masonry remaining. It stands beside the arroyo, and in places has been cut into by the water. This is a good example of the most prevalent Chaco-Canyon type of building, which in general took the form of our capital letter E. The order of growth probably was first the straight linear mass, represented by the back of the letter. When needed, one wing was built on giving the building an L shape. Several of the Chaco pueblos remained in this form to the end. With the majority the other wing was added, and in some instances the central stem of the E. Whether this last member was added or not the extremities of the wings were usually connected by a curving front wall, or as in several of the larger pueblos by a series of one- or two-story rooms, built on a sweeping curve, forming a fourth side of the building and enclosing a spacious court which in time was nearly filled with circular kivas. Pueblo del Arroyo has all these elements except the middle stem.

This style of ground plan (with the exception of the curved front which might well be copied) is now widely used in hotel and office buildings in modern American cities, being dictated by economy and efficiency as to light, air and space. The Department of the Interior building in Washington, if it had the central

stem shortened and the curved front added, would be in good Chaco-Canyon style. The Chaqueños would have spread it over more space, limited the height to four or five stories on the exterior, with a succession of terraces around the inner courts.

Chetro Ketl of the central group is nearly half a mile east of Bonito. It varies from the type by having one of the wings of the E completely extended, the other only partially; the central stem is present and the sweeping curved front. As yet an accurate comparison of size with Pueblo Bonito can not be made for the reason that so much of Chetro Ketl is buried. The curved front, not merely a wall as formerly supposed, but a part of the building two to three rooms wide and one to two stories high, is seven hundred feet in length —two average city blocks. It is entirely buried, showing only as a ridge of earth. The long north wall standing one to three stories above the surrounding sand with one to two stories buried beneath, is over four hundred fifty feet long. If one starts at the southeast corner of this structure, at the point where the excavations commenced, and follows its outer walls clear around to the point of starting, he must walk one thousand five hundred and forty feet—between a quarter and a third of a mile. Here then was a community-residence (an ancient apartment-house) which, if set down in a modern American city, would pretty fully occupy two average blocks. As a dwelling house, built by people for their own domestic purposes, I know of nothing to compare with it in the world—ancient or modern. Chetro Ketl is rich in the variety and beauty of its walls. The striking banded effects, produced by courses of heavy stone alternating with layers made up of fine laminated plates, are to be seen here at their best.

Casa Rinconada, the remaining unit of the central group, lies across the arroyo to the south. It was a great ceremonial chamber, sixty-six feet in diameter, a tribal sanctuary. Like all the kivas of the Chaco, it was circular in form. There are about it the ruined walls of probably thirty to forty rectangular rooms. In the walls of the great circular chamber at regular intervals apart are thirty-two niches, twelve by sixteen inches, by fourteen inches deep, probably recesses for ceremonial objects. The chamber may have been an open arena without roof. Excavation will be necessary to determine the character of this interesting ruin in detail. It is isolated from the large dwelling houses.

Neighboring towns will be only briefly mentioned.

Pueblo Alto is on the mesa north of the canyon, a little more than half a mile from Bonito. It consists of two buildings, Alto Grande and Alto Chiquito. The former is the main one and is greatly reduced. Only a small per cent. of the wall remains standing and not much of it is buried. The building stone was poor. The small house is in a better state of preservation. From Pueblo Alto is a prospect of desert and space that is incomparable. Here seems the fitting place for the Zuni name, "The Ancient Place of the Spaces."

Tsin Kletzin (Black Wood, or Charcoal, Place) is a small ruin on the mesa nearly a mile south of Bonito. It has many interesting features, including an unusual ground plan. It has some excellent masonry in its walls. The fact that a point near this ruin could be seen from nearly every one of the Chaco settlements, even the distant outposts, suggests the possibility of this spot as an ancient signaling station.

Down the canyon a half-mile below Bonito is Kin Kletso (Yellow House) and another mile farther

on Casa Chiquita (Little House). Both of these are small houses that never got beyond the early stages of development. No wings were extended from their main axes. Interesting masses of their walls remain standing.

Three miles below Bonito, on a high point south of the canyon, is Peñasco Blanco (White Rock Point). It ranks almost with Bonito and Chetro Ketl in size and interest. In its ground plan it is an ellipse, all its exterior walls being curved. It has been sadly vandalized. It displays every grade of masonry, some extremely poor, and other of the most substantial sort, with many of the finest examples of banded walls to be seen in the Chaco group.

Two miles above Chetro Ketl, close up to the canyon wall, is the ruin of Hungopavi. The name is probably a corruption of the Hopi word Shungopavi. It is one of perfect unity of plan, the E form, with both wings complete, central stem, and the wings connected by a curved front. The north wall stands twenty feet high in places, and is built of small stone, closely and compactly laid. It lacks the ornamental effects that are so noticeable at Chetro Ketl. The whole building is dark brownish-red in color. One of the most interesting stairways to the mesa top, with which each pueblo was provided, is the one at Hungopavi.

A mile farther up the canyon where the two forks, Chaco and Fahada join, is Una Vida. The ruin is not well preserved; it contains much poorly built wall. Across the canyon to the southeast is the round Mesa Fahada, a landmark for all the surrounding country. The Navaho call it Say-de-gil, the Sacred Mountain. It is a cardinal point in Navaho mythology. Above Una Vida, on a ledge about one hundred yards to the

northwest, is a circular ceremonial chamber of great size, only second to Rinconada above described and the one in the Court at Chetro Ketl.

Wijiji is a small ruin about two miles above Una Vida. It is symmetrical in its ground plan and has no unusual features. It is without the curving front wall. The main north wall is pierced with port-holes in the second story, the apertures extending diagonally through the wall and alternating in direction from northeast to northwest. This may have been a device for archers in defending the place.

Pueblo Pintado is ten miles east of Wijiji, near the top of the Continental Divide where the Chaco originates. It occupies a high point visible from far distances and constitutes a valuable landmark in the desert. It is a large ruin, well preserved, and particularly important in being near the frontier of the Rio Grande pueblos. Much desert legendry centers about it and its walls exhibit interesting evidence of historic changes.

Kin Klizhin (Black House), five miles southwest of Bonito, is mainly a large tower-kiva, enclosed in the walls of a small pueblo. It could have accommodated only a small clan. Near by are the remains of interesting prehistoric irrigation works.

Kin Biniola (House of the Winds) is ten miles southwest of Bonito in a branch of the Chaco. It is one of the important ruins of the region, mostly above ground and well preserved. It is surrounded by interesting outlying sites and was well provided with agricultural land. It was probably the center of a considerable population.

For a somewhat detailed account of the excavation of a Chaco Canyon ruin, Chetro Ketl will afford the best example.

No account of excavations in the desert would be complete without first taking into account the Indians who wield the picks and shovels.

The Navaho, who have for some centuries inhabited the region surrounding the Chaco Canyon, are a numerous and increasing tribe. They number approximately forty thousand at the present time, and are a people of great promise. They have successfully met the conditions of the desert. They have kept their blood pure, are comparatively free from infectious diseases, and show a power of adaptation to changing conditions which promises survival and progress. Unlike the Pueblos who are communal in mode of life, the Navaho are individualists. With respect to vital and economic conditions, as well as for the development of personal initiative, the latter mode has every advantage over the former. The Navaho are industrious, good-natured, susceptible to education, as honest as their white neighbors, capable of acquiring habits of thrift, and on the whole constitute a valuable element in our population. Without the Navaho, excavation in the desert would be well-nigh impossible.

The first step in the excavation of Chetro Ketl was to examine the area surrounding the ruin for refuse heaps and burial-places, which unless first excavated might be lost under the débris from the buildings. The large oval mound a few yards to the east of the walls was divided from end to end by a broad trench on its longer axis, going down supposedly to the undisturbed soil. Later investigations showed that we had gone only half deep enough. A similar trench on the short diameter cut it into quarters. In addition to this, large sections on the side of the mound nearest the pueblo were completely excavated, minutely examined and re-

moved. The stratification of the mound from its beginning is thus laid bare, not only for our own information but for study by any one else who wishes to undertake the reading of the story it has to tell. The successive layers are fairly clear, all carrying plentiful deposits of cultural remains, bone implements, potsherds and the usual refuse of domestic life. Whatever has been unconsciously recorded from generation to generation by casting the waste of the community into common dumps, can here be disclosed by patient, persevering study. To detect the gradual changes in culture, advancing or retrograding the accelerations, retardations, dislocations, is possible but always open to error. A perfect refuse mound (which probably doesn't exist) would show the response of the human group to changing conditions in much the same manner that the annular rings of forest trees tell of the seasons of prosperity, adversity, well-being, disease, etc., that the forests have experienced. The great mound at Chetro Ketl was not a place for the burial of the dead. It yields much material for study but little that is suitable for museum display.

In determining the procedure for the excavation of the great house, is was assumed that many unfamiliar factors must be reckoned with—an assumption that was fully confirmed as the work advanced. The most favorable approach seemed to be by way of the southeast corner. It was almost completely buried, suggesting a minimum of danger to workmen from shattered walls. It was at the end of one wing, presenting the only clearly exposed corner of the ruin. It was one point of origin of the great ridge, formerly supposed to be a buried wall, that sweeps in a bold curve from this point to the west end of the site seven hundred feet away. The

examination of this corner then would probably reveal several important aspects of our problem.

Therefore, an area ninety feet square was laid off for excavation. The surface indication was that it would disclose the end of the east wing, the juncture of the curved front, and nine or ten living-rooms on the ground floor of the wing. What was found will be understood best by referring to the photographs. The curved front is a building with a massive central axis and rooms on either side. It may have been two stories high in places. The central wall is pierced by doorways, all securely closed with masonry, originally affording communication between the rooms on the inner court and those facing outward. The exterior rooms are without outside openings on the level that remains. Outside this series of exterior rooms is a trench eight feet deep, two feet wide, between heavy walls of masonry. The floor is hard and smooth and shows much use. This trench, entirely unexpected, is without precedent in the ruins of the Southwest. If it proves to be continuous with the curving ridge, it afforded a protected passage from the extreme southeast corner of the town to the northwestern quarter seven hundred feet away.

The excavation of the southern extremity of the east wing on the building disclosed two stories buried, instead of one as expected. The views looking down into the excavated rooms convey a fair idea of the situation as we find it, and reveal the knowledge of construction possessed by these people. Partition walls were sometimes reenforced by imbedding timbers in the masonry as we reenforce concrete walls with iron rods. Floors and ceilings were constructed by first laying heavy supporting logs (*vigas*) across from wall to wall. Upon these were laid, longitudinally, smaller logs or poles,

placed closely side by side. Upon these were laid thin cedar slabs and over this a layer of cedar bark. Upon this was a solidly packed layer of earth, kept hard and smooth by rubbing with smoothing stones. The methods of timbering, flooring and plastering may be clearly seen in the photographs. Some of the cleared rooms are in a remarkable state of preservation. Many rooms are unexpectedly large, being much more spacious than those which I have enjoyed in the National Arts Club in New York, the Cosmos Club in Washington, or in the very modern Alvarado Hotel in Albuquerque.

The extension of the excavation into the plaza or inner court brought other surprises. The perfectly level surface gave no sign of the labyrinth of kivas, shafts, cists and variously walled spaces that were uncovered. Kivas crowding, cutting into and overlying one another are found as far as the digging has gone. Each one is a variant from the conventional type of the San Juan culture area. The common characteristic is that all are circular and solidly walled.

In this study of the ancient monuments of Chaco Canyon, I have made a comparison of the achievements of these master-builders of the American desert with the much better-known works of ancient peoples of the Old World. Here are buildings which, abandoned, unroofed, exposed to the elements and vandals of centuries, stand as very few specimens of wal s (we are not considering pyramidal masses) in any land have withstood the ages. In wall masonry the Chaco builders were unsurpassed, and it may be doubted if our modern masonry will be as enduring. As to our reenforced concrete, time has made no test. Chaco Canyon walls are on an average as well built as those of ancient Troy, Mycenæ,

Babylon, Nippur, Jericho, Carthage, and Pachacamac in Peru, in many cases far better.

Most interesting are the architectural remains of ancient peoples in relation to human life. Monuments of the Old World are chiefly memorials of kings, priests and a miscalled "nobility"—palaces, fortresses, temples, tombs—built by myriads whose sordid lives were of no account, under the compulsion of military and religious power. The common people built little for their own use. Those dynasties, courts and priestly orders have been extinct for ages, but the races survive in the abject, servile, degraded humanity to be seen to-day in Egypt and the Near East. The great houses that have been the subject of this chapter are an expression, first of all, of the domestic life of a race. They were built by free men, of their own volition, in their own time and way, as *homes for their families.* They represent the labor "of the people, by the people, for the people," and they are not wanting in the qualities that make for endurance. They memorialize the lives of the people, not of kings. This culture, too, is in ruins, but the race survives; and whether its survivors prove to be Navaho or Pueblo or Yaqui or Aztec, or any other Indian tribe, it will be found that in spite of all the handicaps of conquest by a race of superior material resources, there survives a dignity, self-respect and poise of a people who developed their culture under conditions of freedom—a genuine "nobility."

In our excavations at Chetro Ketl we learned that the unexpected must constantly be looked for. The walled trench outside the curved front was a new feature in ancient Pueblo architecture. The labyrinth of kivas inside the main court lacked in almost every example the conformity to type which is so characteristic of the

kivas of the San Juan drainage. At Chetro Ketl no two are alike in all respects. Along with these are numerous cists, vaults and pits for which we have little precedent. There is something to keep the archæologist guessing every day.

Adjoining the area of kivas above referred to, on the west, was a shallow depression of considerable diameter. This has been referred to by writers who have described these ruins as a reservoir, a natural depression and a large kiva. It proved to be one of the surprises that we look for in the Chaco, an enormous circular ceremonial structure, the largest of its kind that has been excavated in the Southwest.

The accompanying illustrations give a fair idea of this great bowl without much additional description as it appeared after first excavation. Its average diameter is sixty-two and one-half feet. Probably three-fourths of its depth was subterranean. The wall is in the best Chaco Canyon masonry and averages about three feet thick. A bench of solid masonry averaging three and one-half feet in width and four feet high extends around the inside of the bowl, except where broken by a recess about two and one-half feet wide on the south and by a stairway on the north which ascends to a rectangular antechamber. It seems likely that the walls of the main structure were elevated about three feet above the plaza level outside. It can not as yet be determined whether the antechamber, which was a rectangular room having an inside dimension of about fifteen by twenty-three feet, was built up to the full height of a one-story dwelling or not. This chamber appears to have been something of unusual importance, as indicated by the finishing of the walls. The masonry forms a narrow bench on the inside and

the room has been finely plastered in what is now a good old ivory tint. It has a solidly packed floor of adobe. There is nothing to indicate how the antechamber was roofed. A massive bench occupies the south side of the chamber from the top of which one may descend into the great circular room. Seven wooden steps formed the stairway. They were partially rotted out and therefore were replaced by new ones intended to duplicate the original as nearly as possible. From the base of the stairway a stone landing extends from which two steps bring one to the floor of the great circular room.

In looking at the photograph of this circular chamber, one gains the impression that the wall was pierced by small square windows, at regular intervals apart. However, the wall is not entirely pierced, so these may be spoken of as niches rather than windows. They are twenty-nine in number and average roughly about a foot square. At the base of the massive bench, which averages three and one-half to four feet high, are portions of a smaller bench elevated only a few inches above the floor. This may have extended the whole distance around the room, but only fragments of it are left. The main bench is in almost perfect state of preservation and the walls have required very little repair to put them in condition to last for ages.

On the floor of the circular room are two rectangular pits enclosed in walls of solid masonry. The outer wall of each is more than double the thickness of the inner wall. They were found almost filled with ash and charcoal. Examination of the contents disclosed no bones or other articles that could be identified. Everything that had gone into these fire-boxes had been completely incinerated. The inside dimensions of the pits are

roughly four and one-half by eight feet. They were floored with stone laid in adobe. The height of the pit walls above the floor on the main chamber would average about fifteen inches. Their average depth was about three and one-half feet.

In the floor of the main chamber, as seen in the photographs, are four holes, twenty-six feet apart, forming an exact square, averaging four feet deep, ranging in diameter from forty-four to forty-six inches, lined with masonry and each floored with a single disk of sandstone. In these holes rested massive columns which supported the roof. These probably stood not less than twelve feet high. The base of one of the columns remained in place. It was a pine log, twenty-six and one-half inches in diameter. So far as I know this is the largest timber that has been found in the Chaco buildings.

Between the two fire-vaults stands a mass of masonry slightly more than five feet square, with a circular pit in the center. It is still eighteen inches high and has probably been considerably reduced since the structure fell into ruin. For lack of any better term, it may be called an altar. Slightly over a foot away from it to the south is a ruined fire-pit, roughly circular, quite shallow and nearly five feet in diameter.

Remains of sufficient timbers were found to show that the chamber was roofed, at least in part. Heavy logs rested on the tops of the columns, thus forming a perfect square over the central part of the chamber, which may have remained open to the sky. Smaller logs, or *vigas,* extended from these heavy girders to the stone rim. These were probably laid from two to three feet apart. Lighter poles were laid across these after the manner of some of the ceilings shown in the illustra-

tions of this chapter. These in turn were covered with slabs of cedar upon which cedar bark was laid and the whole solidly covered with adobe.

We have here uncovered one of the most remarkable structures known in the Southwest. It is probable that Casa Rinconada will duplicate it. It is of about equal diameter, and is isolated from any important building. A similar one was excavated in Pueblo Bonito by the Hyde Exploring Expedition and has been re-excavated by the National Geographic Society. Its diameter is about ten feet less than that of the great bowl in Chetro Ketl.

Others will likely be found in the towns of the Chaco and in time enough evidence may turn up to warrant an explanation of their uses. On this point, no one can speak conclusively. The one here described has been subjected to great heat, not such as would have been caused merely by the burning out of roof timbers. The pits in the floor are true fire-vaults, the stone lining being baked by long continued heat. They are large enough to have served for the roasting of a whole buffalo and they could have served for the incineration of the dead. The adobe floor of the room from the fire-vaults to the wall was in many places baked and the circular walls, especially those of the massive bench and in places the upper zone, were deeply scorched, even the sandstone under the plaster being browned to a considerable depth below the surface. Dr. J. Walter Fewkes expressed the opinion that this great bowl is the most important structure that has been excavated north of Aztec Mexico. He believes it to have been a sun temple. No one can speak more authoritatively. I hope that he is right in this case.

The structure excavated at Aztec on the San Juan

River, by the American Museum of Natural History, is a variant of the type herein described. Mr. Earl Morris, who excavated it, calls it the House of the Great Kiva. It varies from forty-one to forty-eight feet in diameter. It seems to be similar to what Mr. William H. Holmes described in 1876 as double-walled and triple-walled towers. One of these had a diameter of one hundred and thirty-six, another one hundred and forty feet. Of their probable use he says: "That they belonged to the community of cliff-dwellers, and served as their fortresses, council chambers and places of worship would seem to be natural and reasonable inferences."

The excavation of Chetro Ketl continues every summer. During 1929 the East Tower was excavated and studied by the student body. This is an example of what has been found in numerous ruins of the San Juan region: namely, a round tower built within a square tower and the whole surrounded by living-rooms. Its function was probably that of a kiva. No detailed description of it will be presented here since it would anticipate the technical reports that are in preparation. It may be said, however, that new problems have been brought to light that have not heretofore been studied and that, with the excavation of the West Tower, which will take place immediately, and the two large kivas on lower levels that lie between the towers, there will probably be laid bare one of the most remarkable sacred precincts to be seen anywhere in the Southwest.

The excavations of 1930 have yielded new information of the greatest importance. Test trenches along the great north wall show that when cleared it will stand thirty-four feet above the original soil. Interior excavation now discloses five stories of living-rooms.

Starting anew in the living-rooms around the East Tower and going below what was supposed to be the bottom floor, an additional level of rooms is found, and below this the massive curving walls of an ancient underlying sanctuary, clearly antedating the main Chetro Ketl house walls. Test trenches in the main court verify the prediction made years ago that another large circular sanctuary is buried there. Most spectacular of all are the results of the new work in the Great Bowl. Convinced of the necessity of deeper excavation, a segment with a chord of forty feet was laid off on the south side. Stripping the masonry from the bench that extends around the interior, a more massive and far better built terrace is found underneath. Extending the excavation down, another and still another terrace is laid bare until the original floor is reached twelve feet below the one first uncovered, under which lie massive diagonal walls. There is thus disclosed a vast structure in amphitheater form entirely new to southwestern archæology, rivaling the temples of Mexico and Central America and demonstrating the necessity for deeper excavation in the major ruins of the Southwest.

A word should be said with reference to the irrigating enterprises of the Chaqueños. The best preserved works in the canyon are at Una Vida, three miles above Pueblo Bonito, and those belonging to the pueblo of Peñasco Blanco, three miles below Bonito. Near Una Vida, which is situated against the north wall of the canyon, a reservoir and system of ditches is discernible. Peñasco Blanco is situated on top of the mesa south of the canyon. Its fields lay in the bottom north of the pueblo. No great area was cultivated and it is difficult to understand how this sea of sand could have produced sustenance for such a large community. The

reservoir was built in a bed of sand where seepage would have been so great as to render it nearly useless. This was overcome, at least partially, by lining the bottom with clay and slabs of stone. This clay when indurated formed a moderately good cement and rendered the reservoir effective. The waters from the main channel of the Chaco were diverted by means of a weir and conducted to the reservoir. Seepage in the weir was overcome by the same method as in the reservoir.

Kin Klizhin is a small ruin on the mesa southwest of Pueblo Bonito. Here are well-preserved irrigation works. The pueblo stands on a sandy hill. About an eighth of a mile away is a broad wash and in this are remains of a stone dam. On the east side is a wasteway cut through the solid rock. The reservoir was large enough to impound a meager supply of water for the irrigation of the fields cultivated by the pueblo. These consisted of possibly two hundred acres. The ditch which conducted the water from the reservoir to the fields is filled with sand but plainly discernible.

The best example of irrigation works in the entire Chaco system is that at Kin Biniola. This ruin is about twelve miles southwest of Pueblo Bonito. The ruin is in the basin of a wash which is tributary to Chaco Canyon. The valley is here quite broad and on the eastern side is limited by a low mesa, at the base of which stand the ruins of the pueblo. The wash is about a third of a mile to the west. South of the ruins is a large natural depression, which was made to serve as a reservoir for the flood waters diverted from the wash. A ditch fully two miles long conducted the water from this lake to the fields. The ditch is carried around the mesa and along a series of sand-hills on a fairly uniform grade. It was mainly earthwork, but whenever neces-

sary the lower border was reenforced with walls of stone, portions of which still remain in place.

At Kin Yaah, a small ruin thirty miles south of Chaco Canyon, there are vestiges of an irrigation system. This ruin is situated on an open plain, surrounded by a large area of irrigable land. The works consist of two reservoirs and a canal twenty-five feet to thirty feet wide and in places three or four feet deep.

The excavations in the Chaco Canyon will go on for indefinite years. Carrying out an idea that has been cherished for many years, originating, I believe, with Dr. Frederick Ward Putnam, of Harvard University, who prepared the first plans for the study of the archæology of Chaco Canyon, there has been established here, by the School of American Research of the Archæological Institute of America and the University of New Mexico, a permanent scientific station. Every summer there assembles here a group of university students for the study of the more advanced problems of southwestern research. It has become the training-ground for graduate students from many colleges and universities who have had previous field experience in the more elementary problems elsewhere. Here have been fitted up laboratories for the study of material uncovered, for drafting, survey and linguistic work. A field museum is being installed, accompanied by the necessary library and photographic equipment. It is intended to include with the archæological work research in the correlated fields of geology, paleontology, climatology and all phases of desert life.

There is much to be uncovered at this station in the heart of the Navaho Desert outside of the ancient ruins. The cycle of myths presented in a previous chapter of this work is an example of what is to be dug out of the

minds of the living inhabitants. There are problems of ancient life outside of the human realm reaching back over millions of years. The history of the plants and animals that have undergone the long process of adaptation to desert conditions; the changes in climate that may account for the recession of the forests, and perhaps the depopulation of the region, invite the efforts of students who are eager to attack the big problems of natural and human history. For the first time in southwestern research, the airplane has been brought into service for desert survey work. The first results of this are seen in the airplane photographs facing page 326, which were made during our field season of 1929.

Chapter IV

THE DESERT PROVINCES OF THE WESTERN SLOPE

1. The Painted Desert; Trees Turned to Stone; The Titan of Canyons

Southward of the land of cliffs and canyons described in the previous chapter lies a desert region very different in character. It is the basin of the Little Colorado, largest tributary to enter the Colorado from the south. This area comes very near to answering the description of a real desert as that term is usually understood. Contrary to the San Juan, which cuts its way to the Colorado through abysmal canyons, the Little Colorado flows through a sandy desert for the greater part of its course with its banks but a few feet above the surrounding country. Nevertheless, this region is in its way more noted than either the San Juan or the Rio Grande.

The upper tributaries of the Little Colorado that are of especial interest to us are the Rio Puerco and the Zuni (Great Flowing Water). The former takes its rise in a region of "Bad Lands" in the extreme western part of Arizona. The latter flows out from the fertile fields of the Zuni Valley in western New Mexico. Lying between these tributaries to the west of the Arizona-New Mexico line is one of the natural wonders of America. This is the famed "Petrified Forest." Scattered over an area of over a hundred square miles are the silicified trunks, roots and branches of the ancient forest which originally grew at a level some hundreds of feet higher than the present surface of the desert. At a time when this whole region was an inland sea, this forest was laid prostrate in the salt water and became

converted into a fallen forest of stone by one of those strange processes of nature that only the mineralogists and chemists should undertake to explain. For exquisite color there is nothing that nature has produced in the known world to surpass that of these great trees of agate, carnelian, chalcedony and jasper.

In course of time and as a part of the process by which the mile-deep gorge of the Grand Canyon was furrowed out, the entire surface on which the Petrified Forest rested was cut away, and its countless miles of sand carried to the lower courses of the Colorado River or out into the California Gulf. As the sandstone surface was carried away by the great erosive forces, the logs of the Petrified Forest sank with the lowering bottom of the sea, and came to rest upon their present level. The sea was replaced with an area of desert and mesa quite as we see it now, except for the smoothing and sculpturing by desert winds during the last few million years.

Such is the Petrified Forest, now one of the national monuments of the United States. Here again early man, coming into the southwestern desert, found himself in surroundings indescribably weird and beautiful and to him unaccountable. Remains of Pueblo life are found throughout the Petrified Forest area.

As time went on the process was repeated that we have noticed in the other great southwestern valleys. That is, the Indians gradually made their settlements along the banks of the river. Numerous large towns have been found covered up in the valley sands, seemingly of the period just prior to the coming of the Spaniards. These have been made known largely through the excavations of Dr. Walter Hough, of the United States National Museum, and Dr. J.

Walter Fewkes. The best known of these are Homolobi, near Holbrook, Arizona, and Awatobi, between the river and the Hopi towns.

Toward the lower course of the Little Colorado the country became too rough even for the ancient cliff-dwellers. Lying between this stream and the San Juan before they enter the Colorado, is the Navaho Mountain district, described in the previous chapter. From where these rivers enter the Colorado, there is for a hundred miles or more the most stupendous gorge that has been found upon this planet. The Grand Canyon is a natural wonder that is beyond compare. It is now one of the national parks of the United States, has been visited by millions, described by artists and writers without number, and remains one of the most baffling objects in the world to picture, because of its immensity and the marvelous play of color that seems never to be repeated though one look upon it every day year in and year out. Charles F. Lummis wrote the classic description of the Grand Canyon. It should be read by every one who sees the Southwest. With the permission of the Atchison, Topeka & Santa Fe Railway, Mr. Lummis's and other descriptions of the Canyon are quoted.

"The Grand Canyon bids you! Come, all ye peoples of the earth, to witness God's boldest and most flaming signature across Earth's face! Come—and penitent—ye of the United States, to marvel upon this chiefest miracle of our own land!

"Ten thousand pens have 'described at' this indescribable, in vain. It is alone in the world. It is a matchless cross section of Earth's anatomy, to the geologist. To all it is a poem; history; an imperishable inspiration. Words cannot over-tell it—nor half tell. See it, and you will know why!

"Beyond peradventure it is the greatest chasm in the

world, and the most superb. Enough globe-trotters have seen it to establish that fact. Many have come cynically prepared to be disappointed; to find it overdrawn and really not so stupendous as something else. It is, after all, a hard test that so be-bragged a wonder must endure under the critical scrutiny of them that have seen the earth and the fullness thereof. But I never knew the most self-satisfied veteran traveler to be disappointed in the Grand Canyon, or to patronize it. On the contrary, this is the very class of men who can best comprehend it, and I have seen them fairly break down in its awful presence.

"The quebrada of the Apu-Rimac is a marvel of the Andes, with its vertiginous depths and its suspension bridge of wild vines. The Grand Canyon of the Arkansas, in Colorado, is a noble little slit in the mountains. The Franconia and White Mountain notches in New Hampshire are beautiful. The Yosemite and Yellowstone canyons surpass the world, each in its way. But if all of these were hung up on the opposite wall of the Grand Canyon from you, the chances are fifty to one that you could not tell t'other from which, nor any of them from the hundreds of other canyons which rib that vast vertebrate gorge. If the falls of Niagara were installed in the Grand Canyon between your visits and you knew it by the newspapers—next time you stood on that dizzy rimrock you would probably need good field glasses and much patience before you could locate that cataract which in its place looks pretty big. If Mount Washington were plucked up bodily by the roots —not from where you see it, but from sea level—and carefully set down in the Grand Canyon, you probably would not notice it next morning, unless its dull colors distinguished it in that innumerable congress of larger and painted giants.

"All this, which is literally true, is a mere trifle of what might be said in trying to fix a standard of comparison for the Grand Canyon. But I fancy there is no standard adjustable to the human mind. You may

compare all you will—eloquently and from wide experience, and at last all similes fail. The Grand Canyon is just the Grand Canyon, and that is all you can say. I never have seen any one who could grasp it in a week's hard exploration; nor any one, except some rare Philistine, who could even think he had grasped it. I have seen people rave over it; better people struck dumb with it, even strong men who cried over it; but I have never yet seen the man or woman that expected it.

"It adds seriously to the scientific wonder and the universal impressiveness of this unparalleled chasm that it is not in some stupendous mountain range, but in a vast, arid lofty floor of nearly one hundred thousand square miles—as it were, a crack in the upper story of the continent. There is no preparation for it. Unless you had been told, you would no more dream that out yonder amid the pines the flat earth is slashed to its very bowels, than you would expect to find an iceberg in Broadway. With a very ordinary running jump from the spot where you get your first glimpse of the Canyon you could go down two thousand feet without touching. It is sudden as a well.

"But it is no mere cleft. It is a terrific trough six thousand to seven thousand feet deep, ten to twenty miles wide, hundreds of miles long, peopled with hundreds of peaks taller than any mountain east of the Rockies, yet not one of them with its head so high as your feet and all ablaze with such color as no eastern or European landscape ever knew, even in the Alpen-glow. And as you sit upon the brink the divine scene-shifters give you a new canyon every hour. With each degree of the sun's course the great countersunk mountains we have been watching fade away, and new ones, as terrific, are carved by the westering shadows. It is like a dissection of the whole cosmogony."

—Charles F. Lummis.

"More commanding than the Canyon of the Yellowstone, more beautiful than Niagara, more mysterious

in its depth than the Himalayas in their height, the Grand Canyon remains not the eighth but the first wonder of the world. There is nothing like it."

—Prof. John C. Van Dyke.

"It has a thousand differing moods. No one can know it for what it is who has not lived with it every day of the year. It is like a mountain range—a cloud to-day, a wall of marble to-morrow. When the light falls into it, harsh, direct and searching, it is great, but not beautiful. The lines are chaotic, disturbing—but wait! The clouds and the sunset, the moonrise and the storm will transform it into a splendor no mountain range can surpass. Peaks will shift and glow, walls darken, crags take fire, and gray-green mesas, dimly seen, take on the gleam of opalescent lakes of mountain water. The traveler who goes out to the edge and peers into the great abyss sees but one phase out of hundreds. But to know it, to feel its majesty, one should camp in the bottom and watch the sunset and the moonrise while the river marches from its lair like an angry lion."

—Hamlin Garland.

"It seems a gigantic statement for even Nature to make, all in one mighty stone word. Wildness so godful, cosmic, primeval, bestows a new sense of earth's beauty and size. . . . But the colors, the living rejoicing colors, chanting, morning and evening, in chorus to heaven! Whose brush or pencil, however lovingly inspired, can give us these? In the supreme flaming glory of sunset the whole canyon is transfigured."

—John Muir, in the *Century Magazine*.

Early man made but little use of the cliffs of the Grand Canyon for habitation. A few isolated dwellings are to be found in side gorges and some modern tribes, such as the Havasupai (Blue or Green Water People) and Walapai (Pine-Tree Folk) of Yuman stock, have lived in the bottom of the canyon and its tributaries.

Unlike the great culture area bordering it on the north, the Little Colorado Basin was not depopulated at the time of the coming of the Spaniards. It will be recalled that in the entire San Juan Valley not a single habitation of the ancient people remained. In the Little Colorado Basin two centers of population survived and do to this day, one in the Zuni Valley of western New Mexico where lay the fabled Seven Cities of Cibola (simply the terraced mud villages of Zuni), the lure of which brought Coronado and his army from Mexico City, fifteen hundred miles away, on a march that is rivaled in all history only by that of Xenophon and his Greeks from the shores of the Bosphorus to the Tigris and back. The other still inhabited region was that lying across the Painted Desert to the northwest, the province of Tusayan. Here on the tops of their three mesas in the heart of the Painted Desert are still perched the eight surviving villages of the Hopi.

2. The Fabled "Seven Cities of Cibola"

Probably no myth of the New World, not excepting the alluring El Dorado, had a more potent influence over the Spanish mind than that of the fabled Seven Cities. It is a classic example of myth-making. The human mind does not seem able to get along without certain imaginative possessions. The acquisition of great wealth is one that is well-nigh universal. If material riches are coveted beyond anything else, flights of fancy are always possible which will bring their attainment not quite within grasp, but very near it. The lure of the Seven Cities exactly met the desires of the Spanish mind. Cibola was far distant. If no one could claim actually to have seen it and handled its treasures of gold and silver, there were enough who had the information

from such direct and indirect sources that comparatively little was left to the imagination. It was all but a sure thing. The Europeans of the sixteenth century were in the gambling frame of mind. The search for the Indies was a gamble. The conquests of Mexico and Peru were games of chance of the most spectacular kind. There had been enough winnings to keep the gambling instinct at fever heat. After Cortez and Pizarro, there could be no stopping Coronado and De Soto and Ponce de Leon. After Mexico and Peru, there had to be a Gran Quivira and Seven Cities of Cibola.

Now there did actually exist in what is now western New Mexico a group of adobe villages, each one several stories high and populated by the same race that amassed whatever "Treasure of Montezuma" had been accumulated. True, there were only six of them, but seven cities seem to make a better impression and so it went at that. I doubt very much if the Indians themselves, who carried the information about these terraced towns of the Pueblos to the south, had any desire to exaggerate or did exaggerate their accounts. The Spaniards had all the necessary imagination to convert these descriptions of mud villages into cities rivaling Granada. There was nothing unusual about this. The historian and archæologist, along with other writers of romantic fiction, have been equally creative. The ruins of the villages of the Pueblo Plateau have always been, and still are, spoken of as "buried cities." A quadrangle in the Central American jungles, with two or three outlying mounds, all put together large enough to cover one or two ordinary city blocks, is nearly always called a "buried city" in the literature of American archæology. Hence our Seven Cities of Cibola, a perfectly legitimate creation of the excited imagination of Spanish explorers.

Bandelier made it very clear that this mythical place was the present Zuñi in western New Mexico. Cushing very soon realized this and Hodge never doubted it. These three men are the authorities on Zuni. For the history of the place, it is not necessary to go outside Bandelier's report. For the archæology of Zuni, Hodge is the final authority. His excavations at Hawiku have rounded out the study of the Zuni villages in an entirely satisfactory way. For the study of the mind of the Zuni Indian, it will always be necessary to go to the writings of Frank Hamilton Cushing. He was one of the first American ethnologists to realize that the Indians were their own best interpreters and that in the study of any phase of Indian culture, it is necessary to come just as near to being an Indian as is humanly possible. So, he lived for years among the Zuni, became a member of the tribe and of one of their most important priesthoods; lived and learned to think like an Indian. Cushing translated the mind of the Zuni as Alice Fletcher did the mind of Omaha and Pawnee. It is easy for the critic who does not have this gift to speak of reading into the thought of the Indian that which comes actually from the mind of his interpreter. I have far more confidence in the work of such transcendently gifted men as Cushing than I have in all the critics put together. It has always been difficult for those of limited ability to understand how such streams of mythology as came out of Zuni under the magic wand of Cushing could be genuine. We know now that Cushing merely got the work started. After all the studies at Zuni during the past forty years, we find that there is an inexhaustible source of myth and folk-lore and actual knowledge of plants, animals, minerals and natural phenomena still to be recovered. A

few specimens of the folk tales obtained by our students are presented in a former chapter of this work. It is only necessary to say that the material is still mounting and bids fair to reach voluminous proportions. It all goes to show that the Indian world, like our own, is one of infinite extent. I have no doubt that a century hence, students will be finding new sources of information at Zuni.

The material culture of Zuni has been well presented in the publications of Mrs. Stevenson. The picture of the older life left us by the historians will be well rounded out when we have Mr. Hodge's final story of his excavations at Hawiku. There is little left that need be said here except that in this large and well-preserved community, still numbering about two thousand souls, we have some of the finest artists, dramatists, poets and story-tellers of the native American race. The Zuni are good farmers, have plenty of land and water, and while not measuring up in wealth to their fabulous reputation of ancient times, are comfortably well off.

A mythical picture of ancient Zuni life as seen by themselves and translated by Cushing must be put down here. Paíyatuma, the Zuni Apollo, inventor of the flute, a true deity of music, is one of the most potent of gods in the Zuni pantheon, and is here seen in connection with the origin of the corn.

"Whilst the people still gazed at these, wondering, out from the Eastland came Paíyatuma and Ténatsali of the All-colored flowers (God of the Seasons), followed by Kwélele with his flame-potent fire-wand. Paíyatuma touched the plants with the refreshing breath of his flute; Ténatsali with the flesh-renewing breath of his flowers; Kwélele, with the ripening breath of his

torch, whereby the new parts were hardened, some to fruitfulness; others, being too closely touched, burned to the very heat of generative warmth, unfruitful in itself, but fruitful making! Then, as Paíyatuma waved his flute, lo! following Ténatsali, the maidens and the attendant Kwélele went forth and disappeared in the mist of the morning. As they vanished, Paíyatuma turned to where, full in the light of the rising sun, stood the seven plants. Lithe and tall stood he there beside them like a far journeyer, and said to the awed watchers:

"'Lo! ye children of men and the Mother,
Ye Brothers of Seed,
Elder, younger,
Behold the *seed plants of all seeds!*
The grass-seeds ye planted, in secret,
Were seen of the stars and the regions,
Are shown in the forms of these tassels!
The plumes that ye planted beside them
Were felt in the far-away spaces,
Are shown in the forms of their leaf-blades!
But the seed that ye see growing from them,
Is the gift of my seven bright maidens,
The stars of the house of my children!
Look well, that ye cherish their persons,
Nor change ye the gift of their being,—
As fertile of flesh for all men
To the bearing of children for men,—
Lest ye lose them, to seek them in vain!
Be ye brothers, ye people, and people;
Be ye happy, ye Priests of the Corn!
Lo! The seed of all seed-plants is born!'

"As the people eagerly looked, the mists of the morning were seen to be clearing away, and gone within them, even as his voice, was Paíyatuma!"

3. The Province of Tusayan

Far out across the Painted Desert, an ancient tribe speaking the Shoshonean language preempted three

prominent table-lands that rise in the midst of the desert, which have come to be known as the East, Middle and West Mesas. Here they built the towns that constituted the province of Tusayan. On the East Mesa were, and are to this day, Walpi and Sichomovi. Some miles to the west, they built Mishongnovi, Shipaulovi and Shongopovi. Still farther on the large town of Oraibi was built upon the West Mesa. This was later broken up into a number of farming communities of which Hotavilla and Moencopi are the most important. Gradually the population of the parent village, Oraibi, became dispersed to the outlying villages until now it is almost an archæological site.

Whether a Shoshonean tribe coming in as a body sought the advantages of these three secure mesas and split up into the six or seven original towns, or whether we have here another instance of a concentration of scattered clans, we may never positively know. Doctor Fewkes adheres to the latter view and in his early years at Hopi worked out the origin of several clans that came in to make up the Hopi population. He and Dr. Walter Hough are our authorities on Hopi and its culture.

No other surviving group of the Pueblo Indians has yielded so much information concerning Pueblo life, customs and beliefs, as has the Hopi. Perhaps no other has been so thoroughly studied. The papers of Doctor Fewkes in which the rituals of Tusayan were so ably analyzed have furnished the starting-point for nearly all similar studies in the Southwest. The isolation of the Hopi not only served for their physical protection, but it was the means of preserving their unique culture. The church never succeeded in getting the foothold here that it did in the Rio Grande Valley. No Mexican

neighbors crowded in upon them and for many years travelers and sightseers found it difficult to approach these secluded mesas or to sojourn there, once they had found them. So spectacular, however, are some of their ceremonies, such as the celebrated Snake Dance, that this seclusion could not be maintained. The result is that thousands of spectators now flock to witness the weird snake ceremony. This is having the inevitable effect. This remarkable drama, once so seriously performed, is losing its solemnity with the Indians themselves. While formerly it was worth going any distance to see, it no longer has especial significance either to the student or sightseer.

The ceremony is produced alternately on the East and West Mesas. Doctor Fewkes studied and published it while it was at its best. As it can never be so well done again, his description of it is here given.

"A description of the public part of the Snake Dance, during which the snakes were carried by the dancers in the presence of spectators, has been repeatedly described, and naturally was the most striking part of this weird nine days' ceremonial. This exhibition may be regarded as the culmination of a long series of observances, which have thus far been performed in secret. To it the Hopi gladly welcomed all visitors, and many persons, Indians and white men, from motives of sentiment or curiosity, attended. The roofs of the houses around the plaza, where it took place, were crowded with Navajos, natives of the adjoining villages, Americans from the towns along the railroad, and most of the people of Wal'pi. There were, therefore, many witnesses who could testify that the account here given is not overdrawn.

"There is an unwritten law, governed by tradition, that the Snake Dance must occur as the sun goes down, and it was therefore performed late in the afternoon.

As the plaza is situated on the south side of the village, over which the shadows of the buildings fall at that time, it was impossible to get a good photograph of the observance, and on account of the excitement which prevailed it was difficult to observe all the episodes of this weird celebration.

"The greater part of the afternoon before the dance was passed by both Snake and Antelope priests in their respective kivas painting their paraphernalia and dressing for the coming event. The stifling heat and impure air in these chambers rendered it next to impossible for white observers to remain in them longer than a few moments at a time. Naturally the stench was not as bad in the kiva of the Antelopes as in that of the Snake priests, but there is no good evidence that the foulness of the latter was due to exhalations from the reptiles.

"The Antelopes, led by Wi′-ki, emerged from their kiva in full apparel at about six o'clock, and formed a line in front of the Snake kiva, facing it. As each Antelope took his place he first stepped to the entrance of the Snake kiva and cast a pinch of meal into the hatchway and then took his place in line, after which they marched slowly through the arcade to the dance place, around which they filed with a slow, measured step.

"The older priests, with Wi′-ki at one end of the line, formed a platoon on the west side of the *ki′-si,* and the novices, accompanied by Ta′-wa, who carried the whizzer and the *a′-wa-ta-na-tci,* on the east. Wi′-ki bore his *ti′-po-ni* on one arm, and every Antelope carried his rattle and a crook from the altar.

"The order of seniority among the older men of this society was the same as on the previous day, but the asperger accompanied the Snake priests. They made the sinistral circuit of the plaza four times, passing the *ki′-si* on their right hand, and as they did so dropped a pinch of meal upon the *si′-pa-pu* and stamped with all their might on the board. After having finished these circuits, they arranged themselves in a platoon, broken

midway by the cottonwood bower, as the day before. The entrance of the Snake priests was in marked contrast to the stately appearance of the Antelopes. A low hum of admiration from the assembled spectators, who crowded every available foot of standing room on the house-tops, greeted the appearance of Ko′-pe-li and his line of followers, who then rushed through the arcade. It was a sight never to be forgotten when these warriors, with faces and bodies smeared with pigments and heads covered with bright red feathers, emerged from behind the rock, and four times strode around the plaza. Whatever wealth of ornament they possessed—shell necklaces, colored ribbons, rare feathers, or shells—they had hung upon their bodies for this culminating exhibition. Red oxide of iron tinged all their paraphernalia, and their faces were given a hideous expression by the glistening specular iron on the cheeks, and the kaolin on the chin. The Snake chief led, carrying on his left arm the badge of his office, the sacred *ti′-po-ni* of semi-mythic origin, and in his left hand the brilliant *a′-wa-ta-na-tci*. In his right hand he held a meal bag and a snake-whip. The newly painted kilt with the zigzag figure of the great plume-headed serpent across it, and the dependent fox-skin in the rear, decorated his loins, and he wore his medicine cord and leg rattles. His feet were shod in red moccasins, and the ankles girt by a fringed band of buckskin of the same color. Arm bands and most barbaric necklaces made of mussel and other shells completed his paraphernalia, which was duplicated for the most part in that of all the other Snake priests. Les′-ma, however, was conspicuous among his associates because he wore the necklace of bear and porcupine claws.

"Without delay the warriors formed a platoon facing the Antelope chorus, which then began a low humming song, and while they sang the two platoons swayed their bodies laterally as already described. Each Snake man interlocked fingers with his neighbor and advanced one step forward, resting the weight of the body on the ball of the foot. He then swung the other leg back-

ward, and, poising himself on the toes of the right foot, lifted the other from the ground, after which he brought it back to its former position. At one time every Snake man inclined his body, now to one side, then to the other, and, as he did so, pointed his snakewhip toward the earth, and moved it tremulously back and forth in unison with the song and rattles. Unlike the *Ka-tci'-na* dances, there was no thumping motion of one foot upon the ground in the public exercises of the Snake-Antelope observance.

"The strange, weird melody, accompanied by the sound of the rattles, continued for some time. At the proper moment the asperger with stately tread walked between the lines to the *ki'-si* entrance, and called in a loud voice the archaic words, *Tca-ma-hi'-ye, a-wa-hi'ye, yo-ma-hi-ye, tci-ma-hai'-ye,* sprinkling the charm liquid as he did so to the four cardinal points. Six (?) successive times he repeated this episode, each time returning to his place near Wi'-ki. The songs of this ceremonial closed with a low hum, prolonged by the sound of the rattles preparatory to the culmination of the sensational part of the observance.

"In the performance of so many uncanny rites, it is hard to say which was the most remarkable, but that which followed was certainly sensational. The Snake priests in their kiva had handled the venomous reptiles with abandon, but now began a scene unparalleled in any of the rites of these primitive people. The snakes, which up to this time had been left in the *ki'-si,* were now to be publicly brought out and carried about the plaza. The Snake priests divided into groups of three each, called respectively the carrier, hugger, and gatherer, according to their different functions. These trios gathered in line near the entrance to the ki'-si, and the carrier knelt down in front of it, extending his hand inside while the hugger lifted the carrier's foxskin and stroked its back with his whip. As the carrier rose he held a venomous snake. Without hesitation he dropped his *pa'-ho* and placed the writhing animal in his mouth,

grasping its neck with his teeth or lips. He closed his eyes, and the hugger placed his left arm about the carrier's neck. The reptile was so held that its head pointed towards the right, and the hugger brushed his whip before the serpent's mouth to shield the carrier's face. Both men then started to make the circuit of the plaza in a sinistral direction, closely followed by the gatherer, who picked up the snake if it were dropped. A second trio followed the example of the first, and soon the plaza was filled with priests engaged in this way. It was the intention of the participants to carry the snakes around the whole circuit, but several fell by the way, and thus arose a series of exciting episodes. Here a rattlesnake, dropped on the rocky plaza, coiled to strike its carrier, but was quickly picked up by a more experienced priest; there a swift-moving house snake made its way from its captors among a number of spectators standing on the edge of the mesa.

"As the trio passed the rock in their circuit with the snake, the carrier was sprinkled with sacred meal by a row of women who stood in line at that place.

"Each Antelope was given a snake to hold as the number of the reptiles taken out of the *ki'-si* increased, and during the entire time they kept up a song with the accompanying rattle.

"After all the snakes had been carried, and while they were being held by the priests, Ha'-ha-we, followed by Wi'-ki, traced a ring of prayer-meal about twenty feet in diameter on the ground near the sacred rock, and across it made the six radial lines corresponding to the cardinal points. A signal was given, and each one threw the snakes he held into this circle. To the struggling mass Wi'-ki said a prayer and the women cast whatever meal was left in their trays upon it. At a second signal all the Snake priests rushed to the reptiles, squirming in a heap in the circle of meal, and grasped as many as they could carry in both hands. They rushed through the arcade down the trails to the four cardinal points, from which the snakes were gathered. There they

dropped their burdens and immediately returned, running up the mesa.

"When the snakes had been carried down the mesa to the four cardinal points, the priests returned to their kiva, divested themselves of their dance paraphernalia, and retired to the south side of Wal'-pi, where women stood waiting for them with great bowls of an emetic.

"After drinking this the Snake priests knelt down, some with heads over the side of the cliff, while the emetic took effect. They rubbed their bodies with the liquid, and then retired to the kiva, where the women brought a great abundance of food for the priests who had fasted during the day, and the hungry men gorged themselves with food until far into the evening. The Antelopes did not feast in their kiva at the close of the public Snake Dance, but, after divesting themselves of their dance paraphernalia, they dismantled and destroyed their sand mosaic, and returned to their homes."

While the degeneration of the Snake Ceremony is now going on at a rapid rate, it is a satisfaction to know that the Indians realize the situation and, while willing to attract the large crowds that come every year to see the public ceremony, they give it elsewhere, on one of the more remote mesas, where it is witnessed by very few white people in its archaic form.

Of all the ceremonies of the Hopi, no other is comparable to the Flute ritual. Celebrating as it does the coming of the Rain-Making clan to Hopi, and illustrating as the drama is performed the entire idea of the bringing of the rain, carried out in all its archaic simplicity and without the presence of a horde of spectators, it is the most beautiful and impressive bit of dramatic ritual to be seen among the Pueblo Indians.

Ceramic art early reached a high level at the East Mesa. Doctor Fewkes excavated some of the old Hopi sites of which Sikyatki was the most prolific, bringing

to light one of the most characteristic developments of the potters' art that has been found anywhere. It bears no resemblance to the ancient types of the San Juan, Upper Little Colorado and Upper Gila, which have been described as giving definite character to the ancient pottery of the western slope of the Continental Divide. Probably it is not of very great antiquity. Some of the sites excavated by Doctor Fewkes were occupied down into the historic period. Whatever may have been its source, the art of these villages of the transition from ancient to recent pueblo times so strongly influenced the modern Hopi potters that it is to this day the prevailing Hopi style, readily recognized in distinction from all other wares. Chiefly responsible for this preservation of early Hopi art has been the artist Nampeo who studied the excavated pottery and imitated it in form and ornament, using the clays of especially fine quality that are found in the neighborhood of the ancient Hopi towns.

It is to be regretted that so distinguished an art should be in its decline at Hopi. Only one village now produces artistic pottery; that is, Hano on the East Mesa. This was not mentioned in the list of original Hopi towns for the reason that it was not of the Shoshonean group that peopled these mesas several centuries ago. From the Tewaland of the Rio Grande Valley came a group of warriors some two hundred years ago to aid the Hopi in their warfare with the Navaho. For some reason hard to understand, for the Rio Grande Valley is a paradise of fertility as compared with the Hopi Desert, these warriors sent for their families and took up their abode at the head of the trail leading up the East Mesa. Here they have remained ever since without losing their Tewa language. It is

a remarkable example of the survival of dialect in a small group of people in contact with a large body with whom they continually mingle. One would suppose that the Shoshonean tongue would long ago have submerged this little Tewa island, but there is no sign that anything of the sort is going on.

The village of Shongopovi on the Middle Mesa has the distinction of being the home of the artist Fred Kabotie, some of whose paintings are illustrated in the chapter on Indian art.

There are those who hold that the original name Moki, by which the Spaniards came to know these people, should be restored to them; that the name Hopi is altogether unwarranted. It seems likely, however, that the latter, whether correct or not, has come into such general use that the name Moki can never come back.

Chapter V

THE IRRIGATED PROVINCES

1. Ancient Canal Builders

The Gila Valley of southern New Mexico and Arizona parallels the San Juan Valley three hundred miles to the north and gives into the parent stream of the Colorado not far above the head of the gulf of California. It takes its rise in the mountains of western New Mexico, having for its principal upper tributaries the San Francisco and Tularosa.

During the greater part of its course the Gila finds its way through a semi-arid plain with no important canyons or rapids during its entire course. It receives below its middle valley an important tributary from the north, the Salt River, which adds a large area to its irrigable lands.

The broad valley of the middle and lower Gila presents great possibilities for agriculture, but not without irrigation. This was early recognized by the white forelopers who were beginning to learn how to make the desert blossom as the rose. What was their surprise to find that centuries before them a people, supposedly ignorant of the larger possibilities of agriculture, had farmed large tracts of the Gila Valley with the aid of irrigation dams and canals. As far back from the stream as ten miles irrigating ditches were discovered and single canals twenty-five miles in length were reused.

In the valley of the Salt River no less than a quarter of a million acres were cultivated under irrigation before the coming of the white race. Ditches thirty feet in width and seven feet in depth, with carefully shaped sides and well plastered with clay to prevent seepage,

were discovered and several of these ancient channels were found so well engineered that they could be put into service by the modern settlers. One of these which had been excavated to a depth of twenty to twenty-five feet through the rock is said to have saved the farmers of one community from twenty thousand to twenty-five thousand dollars in construction.

Cushing pointed out that lines of boulders, which can be traced for many miles in various parts of the valley, mark the course of ancient ditches and were used in diverting streams to the cultivated fields. In places remains of what appear to have been wooden head gates have been discovered by excavation.

In many places reservoirs for the storage of surface water, some of them measuring up to a mile in diameter, served for the domestic water supply of the ancient villages as well as for irrigation. In fact the old canal builders of the Gila Valley developed a system of greater extent and efficiency than any other prehistoric people of the American continent. Other evidences of irrigation have been pointed out in this work, especially those at Puyé on the Pajarito Plateau and those in the Chaco Canyon of northwestern New Mexico. These were of amateurish construction as compared with the great canals of the Gila Valley and served to water only small areas.

All over the Southwest irrigation was practised by the ancient Pueblos but usually on a small scale. Gardens were, and still are, watered by hand even where the supply has to be transported by means of ollas carried on the head. The impounding of storm water, both for irrigation and drinking purposes, was universally practised and the storing of rain water in natural depressions of the rock was resorted to wherever geological condi-

tions permitted. But the ancient irrigators of the Gila Valley were on the way toward achievements in irrigation comparable to those which laid the foundation for systems which in the valleys of the Nile, Tigris and Euphrates, made possible the great cities and nations of Oriental antiquity.

2. The Mud Compounds of the Gila

Like the San Juan Valley to the north and the inland basin of Chihuahua to the south and east, the Gila Valley was completely depopulated long before the coming of the Spaniards. The mystery of that decline of an aboriginal population, which had been going on over the Southwest for several centuries, deepens when we consider the possibilities of the rich Gila Valley, its fertile soil with ample water to make it productive, its climate peculiarly congenial to a race that burdened itself with but little clothing, surrounding mountains that made possible a shifting from the heat of the valley to conditions that our modern summer resorts picture as especially inviting, and most remarkable of all, a people so far on the way toward the larger accomplishments of civilization as were these ancient irrigating communities.

The upper Gila duplicates in character the early cliff-dwelling cultures of the San Juan. In the San Francisco and Tularosa Valleys with their tributaries the house life of the San Juan was quite perfectly paralleled and all the cliff-dwelling arts and industries were fully developed. The major fine art of the cliff-dwelling period, that of pottery-making, reached almost identical levels in the upper valleys of the Gila, of the Little Colorado and of the San Juan. So great is the resemblance in the pottery of the upper courses of these

three great valleys of the western slope of the Continental Divide, especially the characteristic black-on-white ware (which should be called black-on-gray, there being no white Pueblo pottery, either ancient or modern) and the ever-prevalent coiled-and-indented cooking ware (which should be called corrugated-and-indented, since all Pueblo pottery, ancient and modern, has been made by coiling), that only experts could pretend to separate the wares of the three sub-areas. I imagine that a mixed lot of the two classes above referred to, piled together at random, would baffle the most expert of living pottery specialists. This zone of pottery type, extending as it does along the upper altitudes on the western slope of the Continental Divide, suggests the possibility of human culture zones determined by altitude comparable to the plant zones of the Southwest, designated as Upper and Lower Sonoran, Transition, Canadian and Alpine. Some eager young student of archæology yearning toward a Ph. D. degree might find in this suggestion substance for a piece of research that would really merit an eminent academic title. At any rate that stream of "black-on-gray" and "corrugated-and-indented" pottery extending from the northernmost limit of the San Juan watershed at a fairly uniform altitude along the western slope of the Continental Divide to the mountain tributaries of the Gila, with so little variation from one end to the other, is worthy of the most discriminating study.

But it is only in the upper Gila that the ancient culture seems closely related to that of the other major drainage areas. The middle and lower Gila centers of population were preeminently the home of adobe house-building. True, mud was used to some extent in all of the other regions that have been described, but in the

Gila Valley it becomes the dominant characteristic of the ancient culture. Soil and climate and all other physiographic conditions invited the use of the native soil for building purposes. Early man did not fail to discover that sun-baked mud would retain form and consistency almost equal to stone. But the use of stone in blocks apparently did not suggest the molding of adobe into bricks. That step in advance was brought in by the Spaniards. The native Gila builder dug a shallow trench in the ground, puddled in a foundation course of mud with or without reenforcing of broken rock or cobble-stone, and upon this constructed his first course of adobe masonry. The wall to be built was determined in thickness and length by a box of mud-plastered wattle-work built to contain a course from two to four feet high. This was puddled full of the native mud and allowed to stand until thoroughly dried. Since with these early builders time was not the essence of life as with the moderns, it made no difference if the solidification of this course required several months. When entirely dried and hardened the wattle-work was raised in preparation for a second course. This was puddled in, left to dry, and then the process was repeated until the full height of the building was achieved. This type of wall construction is clearly discernible. It is a forerunner of our modern method of building with concrete.

House-building and town-building in the Gila Valley varied decidedly from that of the Rio Grande, San Juan or Little Colorado. It is duplicated in the Chihuahua Basin. We miss here the familiar quadrangles of many-storied, multiple-chambered apartment-houses. Also the round subterranean kivas and the double- and triple-walled towers of the farther north. The favorite

type of community structure was the compound consisting of one dominant building with mud walls of great thickness and, for rooms, small cells which remind one of the temple architecture of Toltec, Aztec and Maya peoples. Around these were extended compounds enclosed in thick adobe walls which probably served for the protection of the communities in their fragile grass houses such as are still seen in the Pima and Papago villages of southern Arizona.

The adobe compound was first thoroughly described by Doctor Fewkes in connection with his excavation of the Casa Grande ruin. This ruin may be taken as the type and culmination of the mud compounds of the Gila Valley. It was a roofless, abandoned ruin when first seen by the Jesuit Father Kino in 1694, and doubtless had been in that condition for some centuries. Its walls are from three to five feet thick, built in the manner above described. They still stand to the height of from twenty to twenty-five feet, though the central tower reached an altitude of upward of thirty feet above the ground. As its exterior dimensions are only forty-three by fifty-nine feet and as its ground plan embraces only five rooms, it could not have been a community house. Even if there were living-rooms in the third and fourth stories, it could not have accommodated a group of families. It would therefore seem that this structure which dominated the outlying Casa Grande compounds was a ceremonial house or temple and marked a transition between the Pueblo communities of the Southwest and the higher cultures of Middle America to the south.

Casa Grande, like all other important ruins of the Southwest, passed through its centuries of natural decay and human vandalism. Its excavation, repair and pres-

ervation by the government of the United States, which has made it a national monument, was another outstanding achievement of the veteran archæologist of the Southwest, Doctor J. Walter Fewkes.

Chapter VI

DWELLERS OF THE INLAND BASIN

In southern New Mexico the Continental Divide separates the Mimbres Valley from the headwaters of the Gila on the north and west. Naturally one would have expected the waters of the Mimbres to find their way into the near-by Rio Grande to the east, but something happened geologically to prevent this. A ridge, scarcely perceptible as a watershed, though in some cases elevated into considerable hills within the confines of New Mexico and later on in Old Mexico becoming mountain spurs, shuts the Mimbres Basin in and causes its waters, such as do not sink in the sand, to carry on into the Chihuahua Basin to the south. There is thus formed the great Mimbres-Chihuahua inland valley, draining neither into the Atlantic nor the Pacific. In some parts it is still fairly well watered, but in others, typical southwestern desert. The northern end of the basin is drained by the Mimbres. The section in Chihuahua carries several small rivers to the north, the most important being the Casas Grandes, San Joaquin and Santa Maria, which find their way to the shallow lakes of Guzman.

To get out of this double basin to the west, one must cross the Sierra Madre, which here is the Continental Divide. To the north are the spurs of the divide, known as the San Francisco and the Mogollon. To the south, one must cross the high watershed of the Conchos River, and to the east the ridges heretofore described which separate the basin from the Rio Grande.

In the foot-hills surrounding this great basin on every side are convenient rock shelters, in many of which

archæological remains have been found, even by superficial exploration. On the western side, that is, on the slopes of the Sierra Madre, these develop into cliff villages comparable in many respects to those of the San Juan country several hundred miles to the north. Following the same course of evolution that has been pointed out in the northern basins, population spread over the fertile valleys and plains. As will be explained further on, the Chihuahua Valley, wherever sufficiently watered, came to be covered with small-house settlements and with massive adobe compounds similar to those of the Middle Gila.

Curiously enough, while occupying the same drainage basin, the population divided itself into two perfectly distinct cultures. The southern and more extensive was that of Chihuahua, almost entirely in Old Mexico. The northern was the Mimbres Valley, lying within the present confines of New Mexico. The latter will be described first.

1. An Ancient Art Province

The most curious and in some ways the most interesting cultural development of the Pueblo Plateau was that of the Mimbres Valley. Devoid of striking geographic features, rich in soil, poor in flowing streams, hot in climate, the Mimbres Valley would seem to be an uninviting land. Nevertheless, wherever habitable, it was overspread by a population which, in at least one respect, surpassed all other ancient pueblo groups. They belonged to the middle epoch of our chronological chart; that is, the Ancient Pueblo. But in their house-building we find no cliff-dwellings and no terraced community houses. Nowhere else did the pit village appear to be in such exclusive favor. This is not to be wondered at,

for it would not be possible to build a house better suited to the climate of that valley than the pit house. Being sunk in the earth to a depth of from two to six feet would in itself take the domicile out of the broiling sun into the coolness of the cave or cellar characteristic of many desert regions. Roofing the house with the open canopy consisting of corner posts supporting a roof covered with brush permitting the perfect circulation of air, but giving shelter from the sun, is, as every archæologist knows who has lived under the shelter of the desert *ramadi,* the most agreeable structure for desert life that has been devised. The combination of pit and ramadi is something that no one could beat for life in the Mimbres Valley.

So while going along with their contemporaries of the Gila, San Juan, Rio Grande and Chihuahua in all the major arts and industries of the Pueblos, they, in village life, stuck to the primitive pit house to the end. Analogous to this in ancient house life under similar conditions are the cave villages of the troglodytes of the Matmata Mountains of the Tunisian Sahara where a people are still living happily in their caves as they did in the days of Herodotus twenty-five hundred years ago. In the case of the Mimbreños, however, nature, or perhaps their tribal gods, failed them and they went the way of their neighbors of Chihuahua and the Gila, probably during the same period.

Had the Mimbreños stopped with what has been noticed above, they would have made no outstanding contribution to Pueblo civilization, but something happened to turn their minds into an exceptional channel in such a distinctive way as to place them in a class by themselves. As they progressed in their pottery making, they developed the usual types of the western slope

of the Continental Divide. All forms of the well-known corrugated ware, used mainly for cooking purposes, were familiar to them. This with the black-on-gray (black-on-white) prevalent from the San Juan to the Gila constituted the bulk of their ceramic ware. In the latter class we miss the great variety of forms characteristic of the Upper Gila, the Rio Puerco, and the San Juan and its tributaries. They confined themselves not entirely but quite generally, to food bowl shapes. In geometric decoration we discover nothing superior to that of the potters of the western slope, but somewhere along the line of development a caprice struck the artists of the Mimbres. They took to life forms of the most striking kind and developed the most marvelous system that I know of among primitive potters of the world. In the use of life motifs, they exhibited a play of fancy that belongs only to master-artists. Among birds, the parrot and quail were favorites. Among mammals we discover dog, deer, antelope, rabbit. Various species of fish entered into their decorative patterns. Insects were lavishly used and, occasionally, reptiles, but apparently the plumed serpent did not mean to them what it did to their neighbors of Chihuahua and the Rio Grande Valley. In addition to these more or less realistic motifs, treated in fantastic manner, are animals that could be classified only by the myth-makers who had a hand in their creation. These artists merit a place with the ablest cartoonists of all time.

Our excavations in the Mimbres Valley, which have been going on for some years past, together with those of several other institutions, enable us to produce with reasonable certainty this picture of ancient Mimbres life. They were agriculturists. The mountains to the north and west afforded the best of hunting-grounds and

the numerous house remains on the mountain slopes to the north, found in places for miles in extent on the very summit of the watershed between the Mimbres and the Gila, indicate that these people did about what we would do under similar circumstances. That is, they got out of the hot regions whenever the requirements of agricultural life permitted, into the cool mountains for the more congenial occupations of fishing and hunting. Everything seems to point to a dual mode of life according to the seasons, with corn and mesquite products as their principal vegetable supplies, supplemented by the abundant fish and game of the mountains. Analogous to this we have the custom of the Tarahumara Indians of southern Chihuahua who farm their open fields in the mountains during the summer and spend the cold months of winter in the barancas of the Pacific slope. Somewhat similar also was the custom of the Indians of southern California who spent certain weeks on the shore subsisting on sea food, and a considerable part of each year living on the products of the mountain valleys now called the "Back Country."

The one thing, however, which causes the Mimbres population to stand out among ancient pueblos as incomparable, was that singular development of esthetic imagination which produced the wealth of pottery that the museums of the world are scrambling for and which permits the Mimbres Valley to be designated as an Ancient Art Province. The writings of the late Wesley Bradfield will, when published, be authoritative on the Mimbres Valley culture.

2. The Land of the Seven Caves

The high inland basin of northern Chihuahua begins in the southern part of New Mexico and extends south

for a distance of about two hundred miles. Its drainage is received by the lakes of Guzman. In its physical aspects the country resembles the plain south of Rio Gila, though it is somewhat better watered.

The ancient population, all of which disappeared before the coming of the Spaniards, left conspicuous remains in several districts. The eastern portion, comprising the Santa Maria and San Joaquin Valleys, is covered with the characteristic small mounds of the entire inland basin. In the northern part are the ruins of many pueblos scattered over the level plain. The largest are near the Mexican town of Janos. The Casas Grandes is the main focus of ancient population for the entire basin. The "Great Houses," from which the river and basin are named, are situated just outside of a modern Mexican village which bears the same name. The ruins form an assemblage of adobe buildings, in structure like the Casa Grande of Arizona, but many times greater in extent. Not enough excavating has been done to determine the arrangement of rooms. It can not be said whether or not the town was walled. There are no traces of circular, subterranean kivas, from which I infer that ceremonial rooms were constructed above ground as at Casa Grande, Arizona. A number of flat mounds are to be seen which conform to the pyramidal bases found in the Gila Valley.

Traveling north from Casas Grandes, keeping on the west side of the river, one is rarely out of sight of small-house ruins. The mounds are numerous all over the plain of Ramos, back to the extreme western limit of the basin, and up the little valleys which open into the plain from the Sierra Madre. In all these buildings, adobe was the material used in construction.

The Cave Valley district is on the eastern slope of

the Sierra Madre and contains many cliff-dwellings built of adobe. A conspicuous new feature is found in the ruins of Cave Valley and in many other ancient village sites. Toward the mouth of the cave in front of the cliff-houses is a structure resembling an enormous inverted olla. Its greatest diameter is twelve feet and its depth thirteen feet. It can be entered through a circular opening at the top. There is a door at the ground, too small to permit of entrance. The structure is made of heavy ropes of long grass, four to six inches in diameter, twisted up in adobe mud and laid in coils as in the making of a great basket. It is then finished with a coating of adobe plaster inside and out. The use of these objects is no longer a matter of conjecture. The same thing is found in Aztec villages one thousand two hundred miles to the south, still in use as granaries. These stand in the open and are covered with a mat of thatch.

Another archæological feature of the district is the system of irrigation. This is largely a mountainous country, the narrow valleys affording a limited area of alluvial soil for agriculture. To supply this deficiency, the slopes of the hills were terraced into narrow benches, supported by retaining walls of stone. Upon these terraces there was gradually built up fertile alluvial deposits. These bench lands would retain much water which would otherwise have been carried rapidly away. By means of small trenches, the waters of the mountain torrents could be arrested and conducted over the little fields. It was a very effective system of irrigation. There are hundreds of miles of these terraces in western Chihuahua. They are quite as numerous in the Carretas and Yaqui Valleys, extending far down the Pacific slope in eastern Sonora. The value to posterity

of this work of an ancient people can hardly be estimated. These terraced fields ceased to be used long ago, but the benches have conserved the water supply, prevented the denudation of the mountainsides, and have held the seeds and vegetation that would otherwise have been washed away. The splendid forests of the Sierra Madre in western Chihuahua and eastern Sonora are in striking contrast with the barren denuded slopes of the same chain in Arizona. The ancient terracing of the mountainsides has profoundly influenced this condition. It is worthy of note that the same system of terracing for irrigation purposes is found in the Aztec region one thousand two hundred miles farther south.

The Yaqui Valley contains many cliff-dwellings usually built of adobe. They occur in the canyon walls of all the small rivers which constitute the headwaters of the Rio Yaqui, especially in Garabato and Gavilan Canyons. They include all the features found in the cliff-dwellings of the Cave Valley and are much larger and better constructed. This is as wild a region as can be found on the North American continent. It is mostly uninhabited, though it has been occasionally reoccupied by small bands of Yaqui Indians who have retreated to these fastnesses. The incessant warfare between the Yaqui and the whites, brought on by the encroachment of the latter upon the lands of the Indians, has converted this industrious, unconquerable tribe into the bands who sometimes commit regrettable depredations. For this reason, the exploration of the Yaqui country is attended with some difficulty.

The Carretas Valley is a cliff-dwelling district in the northern part of Chihuahua, extending across the Sierra Madre into Sonora. The small pueblo ruins of northern Sonora belong to this group.

The Babicora plain marks the southern limit of ancient pueblo ruins. It is another inland basin without outlet. It is about fifty miles in length by twenty in width. Scattered over it are hundreds of small pueblos similar to those found in the Janos and Casas Grandes districts. They are nearly all reduced to grassy mounds. At the south end of this elevated plain the aridian culture stops. Its southern frontier is sharply defined. In an exploration of the Mexican table-land from Arizona to Guatemala one finds no true pueblo ruins farther south.

The Tarahumara Indians, an important tribe to the south, are typical forest people. They make considerable use of caves for storage and as corrals for animals. They also occupy them as temporary shelters. But they are not to be classed as a cave-dwelling or cliff-dwelling people. The living cave-dweller or cliff-dweller does not exist in North America at the present time except in case of dire poverty.

It can not be said that true pueblo or cliff-dwelling culture ever extended south of the Conchas River. A few poor specimens are to be seen in the state of Zacatecas, Mexico, but these are unimportant as cultural evidences.

In the mountainous cliff-dwelling districts of Chihuahua pottery-making and weaving were generally practised. In the valleys, pottery is found buried with the dead under the floors of the houses. In the mountains it accompanies cave burials. On architectural evidence we would class the culture of northern Chihuahua with that of the Gila Valley in Arizona. In this respect there is relationship not very remote. But in ceramic remains there is definite Casas Grandes type, of superior workmanship, distinctive forms, and a rich sym-

bolism expressed in both ornament and form. The prevailing color is a soft yellow with decoration in black or red. Unpainted lustrous blacks and reds are plentiful.

Striking in Casas Grandes pottery are the effigy forms. Of these we note the following:

1. Human effigy vases. In these, faces and the parts of the human body are modeled on one side of the vase. These occur singly and in pairs. Singly, both male and female figures are represented. When paired, there is usually a male and female figure, side by side in a sitting posture. An extraordinary feature of these twin effigy vases is that there is usually a hump on the backs of the male figure. One is reminded of the hump-backed stone idols collected by Doctor Fewkes in Porto Rico. One is almost compelled to see in this a common mythic idea.

2. Effigy vases in which the body is of the form common to the region, with an extension above the rim representing a face. These faces may be human, animal, or grotesque composites of human and animal, human and bird, animal and bird, or even all three.

3. Animal and bird effigies in which the vessel is wholly or in part in some zoomorphic form.

4. Vases of normal shape with small mammal or bird effigies affixed for handles.

In bowl forms, the Casas Grandes type resembles the prevailing bowl form of the Rio Grande Valley.

It is not possible within the limits of this chapter to analyze in detail the decorative system of this pottery. A few striking features may be pointed out. A fine rendering of the plumed serpent motif is seen, the design extending around the body of the vase at its greatest diameter, the head and tail meeting. This is

a treatment of the plumed-serpent motif that is peculiar to Chihuahua. It is more fully conventionalized than it is upon the altars, shrines and sacred meal bowls of the Rio Grande Valley Pueblos at the present time and more pictorial than the form found on the ancient mortuary pottery of the Pajarito Plateau. The parrot motif was much used by the ancient Chihuahuans and was developed into one of their finest conventions. There are few decorated vases found that do not bear some element of this motive.

Especial attention should be called to the perforated stone disk found in the Casas Grandes region. It is about two feet in diameter and six inches thick. It is analogous to the stone ring that was used in the "pelota" or ball game of the Aztecs of Mexico and the Maya of Yucatan. I have also found small specimens of this object in the excavations at Puyé in the Rio Grande Valley, three hundred miles north. Instead of being entirely circular, as are the Rio Grande specimems, some of the Chihuahua examples have a squared base designed to fit into a slot and thus hold the ring upright on the top of a wall or altar.

The study of these southernmost representatives of the ancient Pueblos and cliff-dwellers of the Southwest leads one on into Aztec Mexico. To see if there are any vestiges of relationship between these two widely separated regions has been one objective of every explorer of the Mexican Plateau. Let us finish this survey of the ancient history of the Southwest with a look at Mexico, one thousand two hundred miles to the south, and a quest for possible correlations.

The history of Mexico prior to the Spanish occupation abounds in problems. Its records are not of the kind that historians of the old-fashioned sort were wont

to deal with; hence the incredible mess that Prescott and others made of it. Unhappily, this has been the source of most of the text-book history of Mexico, the basis of what knowledge we thought we had of that fascinating land for some generations.

The romantic school of historians was augmented by an equally romantic school of archæologists, and to make matters worse, LePlongeon and Ignatius Donnelly arose, flourished and were immensely satisfying to a certain type of nineteenth-century mind. So it came about that a veil of mystery enshrouded Middle America. The fabled Atlantis was in high favor and the "vanished races," Toltec, Aztec and Maya, invited the imaginings of dreamers. All sorts of fantastic theories gained acceptance and prepared the soil for the present-day fabrications which occupy the daily press and are believed by millions. The showman was speaking sober truth when he said the public likes to be humbugged. Probably at no previous time in history has the public ear been so attuned to the music of archæological romance. "Lost tribes of Israel" are dragged to light in Central America. Plain Indian tribes are not an acceptable substitute for "mighty races of the past" that have mysteriously vanished; groups of confederated villages do not strike a responsive chord as do the "Old and New Empires." Mythical emperors, kings and high priests are more thrilling than commonplace chiefs and medicine-men. The stubborn hieroglyphic writings and decorative symbols of Central America are perennially deciphered (or just about to be) by means of Egyptian Rosetta stones or ancient Rabbinical keys or something just as good. Anon, they are read by some learned Turk or Hindu pundit, and of late, Chinese scholars are accused of reading with ease inscriptions on slabs excavated near

Mexico City. This is credible. Given a little time for preparation, one could undertake to dig up inscriptions at almost any approved spot that would make perfectly good Chinese laundry tickets.

Nevertheless, after years of toil by Maudsley and Maler and Morley and all the rest who have really toiled in the jungles of tropical America, to say nothing of those who have viewed the scenes from comfortable verandas, knowledge of the history of early America, recorded by contemporary native historians, remains about where it was in the days of the Bishop Diego de Landa, and some of us, against the hopes of our youth, begin to doubt if there is any so recorded. But science plods along eager for the unvarnished *fact,* even though it fails to make the front page, regardless of the oftentimes unwelcome character of its findings.

The early history of Middle America along the only lines that were considered history until quite recently, such as the achievements, physical and vocal, of warriors and statesmen, the chronicles of wars, successions of dynasties, chronological episodes and epochs, is a sealed book. Probably it had little or no history of that sort. If so, it was quite as well off. That kind of stuff got the attention of historians, even as the crimes and calamities of the present day get the head-lines in the American press. The European conception of history comes from an early appreciation of the slogan, "It pays to advertise." Greatness and security in history were often attained by way of oral and literary effort, the skilful use of the press agent, or, before there was any press, the vassal whose business it was to laud the King and see that his greatness was properly recognized. It is a method of making history that is in high favor at the present time.

Most enjoyable it is to turn and contemplate those calm ages of America, the history of which is solely a cultural record of the slow evolution of racial life. Here are deep currents of culture growth expressed from day to day and age to age in the industrial, social, esthetic and religious activities of the people, surviving in fragments that enshrine whatever of nobility has been attained; fragments of beautiful structures built not to the glory of gods or heroes, simply as expressions of spiritual fervor; fragments of dramatic ceremonies, not celebrating the deeds of individuals, human or divine, but presenting in color and rhythm and symbolic movement the soul of a people in vibrant aspiration to its own perfection. We hear much of late of "national aspirations," a noble term misused by political charlatans to designate the unrest and bewilderment engendered by them in simple people who should be permitted to travel the normal road of racial development. The displacement of age-old cultural contentment with "national aspirations" is sometimes a terrible disservice. Eagerly we look over the world for the rise of a people that is not worried with "national aspirations," but longing for the greater life of the spirit. If such a race is to grace the earth again, it will almost certainly come from the soil of America and from the blood of its native race, the Indian.

This part of the final chapter of this book has to do mainly with legendary episodes in the early history of America that have induced much speculation and some research: namely, the ancient movements of the Aztecs, and their possible relation to the bands that went out from the American Southwest. It is of no great consequence whether the traditions are verified or not. Trail-finding is an absorbing diversion, whether

it be piloting your pack-train through the wilderness or plodding in the footsteps of races—footsteps made millennia ago which Time has patiently covered up.

Just here it should be said that nothing described in this work is in any sense a *discovery*. I prefer not to make any more "discoveries." The press is too generous in its treatment of "intrepid explorers." Some of the best known and best loved spots in our happy hunting-grounds out in the Southwest and down in Middle America, spots described from 1540 on, by Spanish captains and soldiers of the Cross, by United States army officers and geological survey men, by Holmes and Bandelier and Lummis, by Stephens and Charnay and Maler, are being "discovered" with increasing brilliancy. Describe a community house in the Chaco Canyon as from "four to five stories high" and reporters consider you entirely too modest; it goes into print "forty-five stories high." Then there are the petrified giants of the Grand Canyon, the hob-nailed dinosaurs that wore the deep rock-trails of the Pajarito, and the never-failing cliff-dwellings "not seen by human eyes since," etc., etc. The public appetite for antiquity was acutely stimulated by the spectacular Egyptian finds of 1922. It, of course, has to be appeased. So the archæologists are in for a strenuous time if they are to meet this demand. A sizable and thrilling volume of archæological exaggerations of the past few years could be compiled. It might issue under the title, *Keeping up with Tut-ankh-Amen.*

But to return to the Aztecs. They flash into the spotlight of history with the invasion of Mexico by Cortez in 1519, simply because they happened to stand in the path of the European bent on conquest—the normal bent of the Europeans. By "right of discovery" the Spaniards claimed the greater part of America and

the lands washed by the Pacific Ocean. The boundaries were indefinite, but tremendously inclusive, embracing roughly the greater part of the earth. Other European nations filed overlapping claims, the later adjudication of which makes up part of the text-book history of America. The Indians had staked their claims some centuries earlier, occupied the lands, built houses thereon, and reared families there—did everything in short that we consider necessary in acquiring title to real estate. But this was overlooked by the European nations. The native Americans, for justification of ruthless conquest and for conversion from paganism, were designated as "savages." For advertising purposes back home, the glorification of conquerors and the bamboozling of kings, the same population afforded "Empires of the Montezumas."

There is some excuse for misconception concerning the status of the Aztec or Mexican civilization at the time of the conquest. The authorities, Indian and Spanish, are contradictory of one another. But the critical work of the historian and archæologist is well along and documentary and culture history together furnish outlines of a picture that the most exacting may accept as true. The Aztecs were a group of village Indians that underwent a rather remarkable development in the Valley of Mexico, the traditional Valley of Anahuac, during the two centuries preceding the conquest. They were not one of the ancient tribes like the Toltecs and Maya; they were late-comers that straggled in from the north according to their own traditions, a sorry band, having been in a migratory state for a long while.

Several other bands of the same linguistic stock, all from the north, had preceded them and had appropriated all the best lands and village sites about the lake of

Tezcuco for their pueblos. The newcomers were received with scant hospitality. There was some land surrounded by swamps and marshes that no one else would have. They had to find refuge somewhere, so they chose the swamps, a place "barely fit to die upon."

You can now form a picture of the first Aztec village. It was built on the few solid patches of land; huts of rushes and swamp grass—about the simplest structure ever built that would pass for a shelter. They were hemmed in by unfriendly settlements, forced to live mainly on fish, birds and water plants. But this Aztec band must have come from an ancestry that knew how to make the most of scanty resources. They built up their land, connecting it by causeways with the main land. It was first made a defensive position and eventually became a stronghold. These people seem to have been, for Indians, unusually warlike. They became a tribe of warriors and soon were availing themselves freely of the resources of the agricultural communities about the lake. Gradually they built a substantial town laid out in ceremonial order and conducted in the manner that characterized village Indians everywhere.

In two centuries the Aztecs of Tenochtitlan made themselves known and feared throughout the Valley of Anahuac and eastward to the sea. They multiplied in numbers and power, developed able war chiefs and in time established a confederacy with other leading towns of the valley for military purposes. When the Europeans arrived and heard of this strong confederated group they saw in it a Mexican nation, state or feudal empire. There was a wide misinterpretation of a social and political structure, new and strange to them.

All this it must be remembered is largely legendary, but legends of two or three centuries among peoples

who do not depend upon written records may be accepted as fairly reliable history. The settlements of the Valley of Mexico were mainly agricultural. Their system of community land tenure had developed through centuries of experience and was suited to their physical and spiritual needs. Then came the Spanish invasion. It was not a peaceful penetration; it was a conquest. Something happened very soon that the Indians to this day have never been able to understand. A Bull of Pope Alexander the Sixth, promulgated at Rome, May 4, 1493, declared that in consideration of their religious devotion and zeal in converting the savages to the Christian faith, the Catholic sovereigns Ferdinand and Isabelle of Spain were made absolute possessors for themselves, their heirs and successors for ever of all the lands already discovered and still to be discovered in the New World. By virtue of this document the Spaniards considered the soil of Mexico to belong to them and wherever they went they acted on this assumption.

Cortez arrived in Mexico with a small force of men, some horses and a few guns; not much of an armament, to be sure, but enough to give the Indians their first taste of real European efficiency. But with all this they could not have prevailed against the superior numbers of the Indians. They would have been wiped out had not Cortez treated the Indians to an example of high-class European diplomacy. Let the student of diplomatic history note that the identical system with which we are familiar in our time, was used successfully by Cortez four centuries ago. He entered into secret treaties with tribes that were jealous of the supremacy of the Mexicans. He granted privileges to certain towns in return for their aid. He not only secured their assistance in warfare by arraying them against one

another but, by leading them into agreements which they could not understand, deprived them of their soil and of their independence and made them vassals of Spain.

Weakened by internal dissension, the tribes of the Mexican plateau, numerous and powerful though they were, yielded to their conquerors and in yielding lost their art, their religion, their social structure, and their language—everything that people must maintain if they are to realize a racial destiny. Then began the decline of a great people, a decline that has lasted four centuries. Nowhere else in the world have we a more convincing illustration of the disaster that overtakes a people when deprived of its native culture. The communities of ancient Anahuac came to a standstill with the conquest. Their fate is typical of that which befell most of the Indians of Middle America.

What do we know of the Aztecs of pre-Anahuac times? Simply the legendary paths, and uniformly these lead in from the north. If there were no traditions to that effect, the student of racial origins could hardly be mistaken. In everything pertaining to the ancient Mexicans, their material culture, esthetic arts, religion, symbolism, social structure, are the shadows of the land to the north—of the ancient pueblos of the American Southwest.

In explorations during the past quarter-century that have covered both sides of the Continental Divide from northern Colorado and Utah to Guatemala and Honduras, one purpose has been to note the natural distribution of the human animal over the mountain, plain and desert areas. There is a certain reasonableness about the major movements of peoples. It was natural for our forebears of the Atlantic seaboard to "go west

and grow up with the country." That was the reasonable thing to do. From the ancient foci of population in the American Southwest—the basin of the Rio Grande and the tributaries of the Colorado, it was natural to flow southward. There was everything to the south to lure man in that direction. Food was none too plentiful in the great American desert; its abundance in Mexico could not fail to become known in the north. Clothing always, as now, a heavy drain on the family resources, ceased to be an item of necessity as man drifted southward. Pressure from other tribes, another of the major causes of migration, would impel to the south, for the ancient village dwellers were pressed by stronger neighbors from the north and east.

Now the Southwest is covered with ancient ruins—abandoned farms, villages and community houses. We would like to fill the insistent orders for "buried cities," but we can't do it. There is none. But there are countless deserted villages—ancient seats of population that have reverted to the desert. What became of their people?

There is close correspondence between the actual structure of a New Mexico pueblo to-day and an ancient Aztec town of Anahuac. The teocalli of the latter has its counterpart in the kiva of the pueblo—in function as a sanctuary, a place of mysteries that foreigners never behold, of secret religious rites, of preparation for ceremonies to be held in the open, of tribal and clan council chamber. Even in the internal arrangement there is much similarity, altar, fire-pit, sipapu, niches for ceremonial objects. The orthodox Pueblo Indian of to-day would feel quite at home in an Aztec sanctuary. In religion and social structure these widely separated peoples were basically the same. Reverence for deific

powers of earth and sky; priesthoods and brotherhoods for esoteric functions; ceremonials for the celebrations of seasonal relations between men and all other created things; a community mode of life with organization corresponding to governor, war-captain, council of head men, etc.; symbols used for decorative patterns in esthetic arts drawn from religious conceptions; the same fine integration of all the factors in culture growth, industrial, esthetic, social, expressional and religious—these vestigial relationships are continually encountered as one studies the archæological remains of Aztec and Pueblo or delves into the minds of the surviving peoples.

The American Southwest, the land of the ancient Pueblos and cliff-dwellers, probably contributed many migratory bands from time to time in the dim past to the peopling of Mexico. The legendary Aztlan was probably some valley from which groups went out long ago to halt eventually in the vale of Anahuac. Seven of these bands figure in Mexican traditions, the last being the Aztec proper; the worn-out but belligerent wanderers that were shoved off into the swamp lands of Tenochtitlan, destined to become the dominant tribe of Anahuac; the people from which sprang the Montezumas, the chiefs exalted by historians into "emperors" of a feudal state; the people who made glorious the history of Mexico for a short period, and whose descendants still constitute an important factor in the population of our neighboring Republic of Mexico.

Of their ancestral home the Aztecs themselves preserved some clear traditions. Duran, native Aztec historian, speaks of "seven caves" from which all Nahuatl tribes issued; "these caves are in Teoculhuacan, otherwise called Aztlan, a country which we all know to be toward the north and connected with Florida." "They

went overland through all the country of the Chichimecas, over the new lands and plains of Cibola." The last named place we know to have been our New Mexico Zuni.

Tezozomac, another Aztec historian, speaks of Aztlan from which the Mexicans came as toward the extreme north, using the expression "they had in this land and the lagunes thereof." Here is an indication of water, and the name "Aztlan" fits the suggestion, meaning, "place of herons."

Acosta, who came to Mexico in 1585, records the traditions of migration of seven principal Nahua tribes of Mexico, all speaking the same language and all coming from the north, though at long intervals apart. He names them in the order of their coming: the Xochomilcos, Chalcas, Tepenecans, Tezcucans, Tlatluicans, Tlascalans, and Aztecs or Mexicans. He speaks of them as coming "from other far countries which lie to the north where now they have discovered a kingdom they call New Mexico. There are two provinces in this country, one called Aztlan, which is to say a place of herons, and the other Teoculhuacan, which signifies a land of such whose grandfathers (ancestors) were divine. The Navatalcas (Nahua) point their beginning and first territory in the figure of a cave and say they came forth of seven caves to come and people the land of Mexico." Other historians recite substantially the same tradition.

Here then are clues we may follow in retracing the steps of the Aztecs from Anahuac back to far Aztlan. It is not the purpose here to point out the landmarks along that trail of the centuries. If you fare to the north a thousand miles or so along the eastern base of the Cordillera, keeping well upon the high plateau, you

will traverse valleys and plains and mountains over which these ancient peoples must have moved. There is rarely a day's journey that is not marked by more or less conspicuous objects of antiquity. Not, however, until you reach the American Southwest are you in the region that meets the conditions of the Aztec tradition. This region I have for many years divided roughly into five areas: namely, the inland basin of Mimbres-Chihuahua, the Rio Grande Valley of New Mexico, a great natural highway between the north and the south, and the three tributary valleys of the Colorado, the Gila, Little Colorado and the San Juan.

San Juan was believed by Morgan, an enthusiastic student of Pueblo and Aztec relations, to be the fabled Aztlan. In common with the two other tributary valleys of the Colorado Basin, it meets none of the conditions of the legend, though all were the seats of numerous ancient population. Teoculhuacan, "the place of divine ancestors," suggests the upper Rio Grande Valley. It is the true "land of the delight makers," where every Indian village holds its dramatic ceremonies in which the Koshare impersonate the spirits of the ancestors, who by virtue of their spirit state are all divine.

The inland basin of northern Chihuahua is still a "place of the lagunes" and "a place of herons." About its western and southern borders are caves of unknown extent, five of which I have personally explored. These may well be of the "seven" of the tradition. I have repeatedly heard of others. The ruins of the region are: the Casas Grandes (great houses), in the center of the valley, built of adobe; large numbers of small-house mounds scattered over the valley; the cliff-dwellings of the western side of the valley, which extend to the crest of the range and beyond into Sonora; and the cave ruins

of the southern rim. These latter have been much used for burial-places. The southern part of the basin, to the crest of the Sierra Madre, and with the winter season including the barrancas of the Sonora side, is the home of the Tarahumara, the most numerous and least sophisticated of all the tribes of Mexico.

My first exploration of this charming region was in the spring of 1906 as Fellow of the Archæological Institute of America. There have been several visits since. Knowing rather intimately almost every mile of the territory along the eastern base of the Cordillera from the San Juan in Colorado and Utah to Mexico City, I can think of but one region that meets the conditions of the Aztec legend. It is improbable that the tradition can ever be positively verified, but I should offer no objection if the people of the Casas Grandes region should name their charming basin the Vale of Aztlan.

CLOSING

THE story of man in the Southwest is one of adaptation to a definite and elemental environment. Obvious everywhere is the urge to live, to reproduce, to survive. The efforts to that end constitute a fascinating chapter in the history of human arts, social structure and beliefs. Running through the amazing story, the golden thread on which the entire fabric is woven, is the thought of the potency of the desert. Inhospitable as it seems, it has given man his food, has nourished his culture, has stimulated his spiritual life. Of its vast future possibilities, few could venture a prediction.

In trying to draw a picture of the great Southwest; to bring to mind the mighty forces that have created it, the subtle influences which have molded life in myriad forms and shaped the destinies of a race, I have sought to tell the story of a noble science. If archæology had to do only with the rescue of dead things and their exhibition in museum halls, I could take little interest in it. But it is the science of things that live; that through the ages do not grow old; of things that disasters can not kill; works of the spirit that, buried for millennia, rise again to new life and potency; the science which demonstrates that in races that have survived from a far past, powers lie dormant which may be energized anew.

Archæology is one of the most dynamic of sciences. Like all science, it seeks only to know the truth. In its quest it is led onward by the imagination, without which there would be no science and the human race would be as the invertebrates. Therefore the archæologist as well as the poet may indulge in flights of fancy.

When he sees the creations of man come forth from the soil where they have slept for ages to inspire the new time as they enriched the old, and point to nobler achievements, may he not think of man himself as falling asleep, drawing the kindly mantle of earth around him, dreaming a while in the embrace of the primal Mother, to be born again with the changing cycles and go on with the creative processes in which he has played a part?

Charles Kingsley wrote:

"So fleet the works of men
Back to their earth again;
Ancient and holy things
Fade like a dream."

I would paraphrase that:

So *rest* the works of men
Safe in their earth again.
Ancient and holy things
Slumber and dream.

And the archæologist, as he sees things rise in beauty from the dust, would add:

So *live* the works of men.
Back from their earth again,
Youthful and lovely things
Wake from their dreams.

So the wonder and beauty of the story grows; the joy of discovery increases; slowly, very slowly, we learn to know what we see. These are old, old trails over which we have gone a-questing to bring the life of the past into the light of to-day. Nature is the wise teacher and man's place and part are becoming clear.

I think of the Southwest as a theater whereon vast forces have played through eons of time; where living things have struggled to survive and grow in an evolv-

ing world; as the stage on which a drama of human life has been enacted; where the spirit of man has striven and brought forth fruit which in due season has returned its seed to earth so that life may go on. Its vast spaces are vibrant. Even its profound silence is soundless music in which broods the spirit of uncreated harmonies. It is a place where scientist and philosopher and artist may walk humbly with the Creative Mind and watch the building of everlasting palaces of beauty.

Truer than the words of Omar that preface these chapters are those of another Persian poet:

> "Amurath to Amurath descendeth,
> But the stars in their courses rise
> And the strong towers that we have built
> They endure."

THE END

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